St. Joe Travel Management

WILDLIFE REPORT

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Introduction

This section documents the analysis and discloses the potential effects on wildlife from the Travel Management Plan alternatives on the St. Joe Ranger District of the Idaho Panhandle National Forests (IPNF). Forest roads and trails provide human access, but human recreation, including the presence and various uses of roads and trails, can adversely affect the availability and quality of wildlife habitat (Joslin and Youmans 1999; Gaines and others 2003). Although the existence of roads and their use can both impact wildlife, the analysis focuses on the differences between motorized and non-motorized use because, based on current literature, motorized roads and trails have a greater magnitude of effects (Gaines and others 2003; Wisdom and others 2004a). The proposed action would designate roads and trails for motorized use and prohibit motorized use off designated routes except in limited areas for dispersed camping.

Regulatory Framework

The regulatory framework providing direction for the management of wildlife habitat most pertinent to this analysis comes primarily from the following sources:

- Endangered Species Act of 1973 (ESA), as amended
- National Forest Management Act of 1976 (NFMA)
- Forest Service Manual (FSM) and Handbook (FSH) direction
- IPNF Land Management Plan (USDA 2015)

Section 7 of the ESA directs federal agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of any threatened or endangered (T&E) species or result in the destruction or adverse modification of their critical habitat. The ESA requires the Forest to assist in recovery of threatened, endangered, and proposed species and the ecosystems upon which they depend.

NFMA provides for balanced consideration of all resources. It requires the Forest Service to plan for diversity of plant and animal communities based on the suitability and capability of the specific land area and within multiple use objectives of a Land Management Plan.

The 2015 Forest Plan, in compliance with NFMA, establishes Forest-wide and Management Area direction, goals, desired conditions, objectives, standards, and guidelines for the management and protection of wildlife habitat and species. Forest-wide goals, objectives and guidelines that to one degree or another apply to this project level analysis include:

- Elk – Increase by three the number of high or medium priority Elk Management Units (EMUs) that provide >30% elk security. Management activities in EMUs should maintain existing levels of elk security. Where possible, management activities in high and medium priority EMUs should improve elk security.

- Sensitive Species - The IPNF manages activities to avoid or minimize disturbance to sensitive species and manages habitat to promote their perpetuation into the future.
- T&E Species – The IPNF manages wildlife habitat to contribute toward recovery of threatened and endangered terrestrial wildlife species.

The Forest Service Manual (FSM) provides direction on policy and procedures regarding wildlife habitat planning and evaluation, threatened and endangered species, sensitive species, and management indicator species (MIS). This includes such things as direction on the biological evaluation process for determining effects on listed and sensitive species

Other laws, regulations, policies, executive orders, etc. address management of wildlife resources (e.g. The Migratory Bird Treaty Act). However, they are not as relevant or directly applicable to this proposal and analysis and are addressed in various ways in the analysis (e.g. by consistency with FSM direction).

Scope of the Analysis

Geographic

The geographic scope of potential effects on wildlife for this analysis was determined based on the spatial extent of proposed federal actions. The Wildlife Analysis Area for direct and indirect effects is the National Forest System (NFS) lands on the St. Joe Ranger District – approximately 725,000 acres. The cumulative effects analysis area includes all lands within the St. Joe Ranger District boundary and is approximately 1,283,400 acres.

Temporal

The temporal scope of the analysis is a function of the nature of the proposal, the relatively large geographic scope of the analysis, ongoing management goals/actions, and natural events. The analysis assesses effects based on both existing conditions at the time of the analysis and potential conditions (e.g. capable habitat that may or may not be currently suitable) once the decision is implemented. The analysis provides a representation of effects until – at some indeterminable time – future unforeseeable actions or events result in appreciable change. The temporal scope of the analysis is influenced by the location and nature of future management actions and natural events because the decision will remain in effect until something warrants a change.

Analysis Methods

The appropriate methodology and level of analysis needed to determine potential effects is influenced by a number of factors, including the purpose and need for the proposal, the nature of the proposal, various regulations/policies, and the potential for impacts, the risk to resources and species, and the information necessary for an informed decision. The National Environmental Policy Act (NEPA) directs the agency to focus on a full and fair discussion of significant issues, and identify and eliminate from detailed study the issues that are not significant. The methodology for the wildlife analysis was developed and conducted based on consideration of the above factors and others (e.g. available data).

For the purposes of this analysis, four broad categories/types of effects associated with travel management were identified. These effects are based on and supported in scientific literature (Gaines and others 2003; Joslin and Youmans 1999; and Leege 1984) and are most applicable to travel planning, the analysis of measurable potential effects, and the decision to be made. These categories help define and focus the analysis on significant environmental issues related to the alternatives.

These broad categories of effects are:

1. Habitat Changes
2. Mortality Risk
3. Habitat Avoidance and Displacement
4. Disruption of Wildlife Linkage/Movement

Habitat Changes - The actual construction and presence of roads results in a direct loss of habitat for some species. The decision to be made does not include the construction or reconstruction of roads and trails, therefore there would be no direct change in habitat due to the actual footprint of roads or trail; and that aspect of this effect is not analyzed further. Roads also afford access for activities that can directly or indirectly affect wildlife habitat. Changes in motorized access related to firewood gathering can affect the number of snags and down logs. This can affect suitability of habitat for species associated with dead trees, cavity habitat, and/or down wood. Although the analysis assumes that this habitat is already lost adjacent to open roads, designation of roads as open or closed to public motorized access can affect future snag availability along these routes. This potential effect is not applicable to trails as little to no activities associated with trail use affect habitat.

Mortality Risk – Motorized use of roads and trails increases vulnerability to hunting or trapping and can increase the potential for direct mortality (e.g. road kill) of some species. Most trapping mortality occurs in winter from use of snow machines, and this use is not addressed by this Travel Management Plan. However, roads and trails can become identifiable avenues for snow machine use when not heavily revegetated from closure or non-use. Hunting vulnerability and mortality of elk increases when road densities increase (Leptich and Zager 1991) without adequate security areas (Hillis and others 1991, Canfield 1991). The vulnerability of fishers to trapping mortality increases with road densities (Heinemeyer and Jones 1994). The risk of direct mortality is primarily associated with high-speed highways (Forman and Alexander 1998; Ruediger and others 1999; Ament and others 2008) and not low-speed forest roads. However, forest roads can result in direct mortality of some wildlife – especially slow-moving species such as amphibians and reptiles dispersing from breeding habitat (Jochimsen and others 2004).

Habitat Avoidance and Displacement – Use of roads and trails can displace wildlife from denning or nesting habitat and other preferred habitats, and can result in avoidance where animals change their use of habitat (Gaines and others 2003). This can include:

a) displacement from sites used for reproduction or rearing of young,
b) alteration of dispersal or other movement, and
c) avoidance of preferred habitat such as forage areas (Gaines and others 2003).

The most important factor affecting use of habitat by elk is human disturbance (Leege 1984) and disturbance originates from use of roads and trails.

Disruption of Wildlife Linkage/Movement – Roads or trails and human activities on or near them can interfere with dispersal or other movements by wildlife (Gaines and others 2003). Roads and trails have an impact on the potential for wildlife movement between areas (Servheen and others 2003). Major ridges and riparian areas through suitable habitat provide connectivity or linkage between populations and habitats. The Bitterroot Divide on the St. Joe (aka Idaho/Montana divide) provides the minimal and/or low impact characteristics associated with high-elevation linkage between habitats (Servheen and others 2003) and has been identified as a potential area of wolf movement (Hansen 1986). With respect to wildlife movement through riparian areas, the Forest Service is not proposing changes in access of existing roads in major riparian areas (i.e. 5th field HUCs), and some of these roads are not under Forest Service jurisdiction. Therefore, there is no benefit to an analysis of effects on connectivity in major riparian areas, and this aspect is not analyzed further.

In general these four categories sufficiently address potential effects on wildlife associated with travel management. They also incorporate an analysis of potential effects on common parameters of wildlife habitat, such as old growth and cavity habitat, through analyses of effects on associated species. However, some potential effects do not fit easily into any of the four categories. For example, roads and trails designated for motorized use can impact prey availability (e.g. big game prey for wolves and carrion for wolverines). These impacts are discussed and displayed when and where pertinent.

This analysis was developed and based on literature and information applicable to the decision to be made and the risk to resources. This includes:

- Applicable Recovery Plans for T&E species,
- Available Conservation Assessments and Strategies for wildlife species,
- Pertinent scientific literature, and
- Various data and information sources (such as Forest Service and Idaho Dept. of Fish and Game)

The geographic scope of this analysis, the related large number of roads involved (more than 4,000 roads and over 5,000 miles); the mixed land ownership pattern, the various road and trail management jurisdictions with different management objectives and strategies, and the unpredictable changing status of roads due to management activity influence the analysis. There is some level of uncertainty associated with any analysis methodology: habitat associations are complex, some variables may be unknown or not described, and available data may not be as specific as that used in the scientific literature. However, this analysis is based on the most applicable scientific literature and uses the best available data (Please see bibliography and project file documents WL6, WL13d, and WL30 - WL36). The Forest Service INFRA database was used to create GIS road layers. This information was validated, updated, and augmented by field review, aerial imagery, and reasonable assumptions based on present management conditions, professional judgment, and the combined knowledge of people from various sources (e.g. IDT members, public input, public and private land management entities). The methodology is commensurate with the existing knowledge, existing data, and the risks associated with the proposal. The analysis allows for a comparison of potential effects by alternative and a decision based on environmental consequences.

To focus and facilitate as clear and relevant an analysis as possible, it was necessary to establish premises and parameters to help shape the type and level of analysis. These premises and parameters include:

- The analysis only addresses changes in National Forest System roads and trails.
- The analysis concentrates on motorized vs. non-motorized use. While acknowledging potential effects associated with various types of road and trail use (e.g. OHV $\leq$ 50", bikes, horses, and hiking), the stronger effects posed by motorized use (Wisdom and others 2004a; Gaines and others 2003; Rowland and others 2003; Leege 1984) were used as a measure of potential effects. Distinctions were made between the various types of motorized uses (OHVs (<50" wide), motorcycles, full-sized vehicles) when and where supported in the literature and measurable with the methodology.
- The type and or status of roads and trails and associated use influence the potential for effects by species and within the four general categories of effects discussed above. For example, motorized trails increase the potential for displacement of some wildlife but would not affect indirect habitat loss through firewood gathering. Potential effects from vehicle collisions with wildlife generally are associated with highways and other high-speed roads, rather than forest roads and trails, which are the primary focus of this proposal.
- Not all species are affected or affected similarly by use of roads and trails.
- Some effects may be too small to measure or insignificant relative to the proposal and other existing conditions. For example, the addition of several hundred feet of non-motorized trail would not have a measurable or significant effect on large, highly mobile forest animals.

- While roads and trails not designated for motorized use may eventually revert to a condition impassible by motor vehicles or be decommissioned in the future and potential effects associated with the road or trail may therefore fade away, those potential effects are beyond the temporal scope of this analysis and will be addressed on a site-specific basis if and when decommissioning is proposed.
- The analysis assesses the potential for effects based on literature descriptions of wildlife use and conditions on the ground. The analysis does not claim nor intend to imply that habitat use as analyzed depicts the only areas for use (e.g. the Idaho/Montana divide provides an "opportunity/potential" for wildlife movement but this is also likely provided by other areas).
- This decision does not affect the road system available for administrative uses such as access for fire suppression and other management activities, or the level of road maintenance.
- Firewood gathering is most prevalent along open roads. While gated roads may be opened temporarily for firewood gathering, where and when this may happen is unknown and is not relevant to the decision.
- Due to the nature and scale of this proposal, it is not plausible or necessary to conduct an analysis at the same resolution using the same measurement criteria as may be appropriate for smaller projects. For example, there is little benefit in determining suitable habitat for most species because potential effects are based on disturbance impacts rather than habitat modification. Therefore, an analysis at a relatively coarse scale is adequate for determining potential effects and making an informed decision.
- Existing data, supplemented and updated by interdisciplinary team knowledge, field checks, and other sources was used to conduct the analysis. This represents the best available information.
- Management on non-NFS lands will likely continue under existing management practices (e.g. private timber corporation lands will emphasize timber production with existing access levels).

The wildlife analysis is organized by species classification. The main sections are:

- Threatened and Endangered (T&E) and Proposed Species,
- USFS Region 1 Sensitive Species, and
- IPNF Management Indicator Species (MIS).

For each species within those classifications the effects are discussed and displayed in the context of the broad categories applicable for the species.

Habitat associations provide a foundation for assessing habitat capability/suitability and assessing potential effects associated with vegetation management projects. However, based on the geographic and temporal scope and nature of this action, the nature of potential effects, the amount and distribution of habitat (Samson 2006a; Bush and Lundberg 2008), the wide-ranging nature of many species, and the nature of habitat use by most species, there is little benefit in determining capable and suitable habitat for each species at the district scale; both in terms of assessing potential effects and in providing information pertinent to making an informed decision. Potential effects can be adequately assessed for most species by measuring changes in the designation of motorized roads and trails (i.e. miles/densities) at the scale or multiple scales appropriate for the species being considered.

However, some species have limited habitat on the district (e.g. flammulated owl), and others may rely on snags or large woody debris as important habitat components (e.g. fishers and woodpeckers). The current or future availability of these habitats can be influenced by travel management. In these cases, the analysis does identify impacts on capable habitat. Capable habitat was identified based on habitat associations and queries of the available databases. Capable habitat has the fixed attributes such as soils, elevation, and potential vegetation (habitat type) that enable it to provide the habitat requirements for a given species either currently or in the future. Suitable habitat, because it is based on variable attributes, changes over time and is more difficult to model at the district scale. Instead, the analysis identifies potentially suitable habitat based on capability and, where necessary, forest type and size class. The analysis of potentially suitable habitat is not intended to determine absolute acres, but to assess the habitat impacts of the different alternatives relative to each other and the district as a whole.

Past actions including road and trail construction, timber harvest, and cost-share agreements on the St. Joe District have influenced travel management and the existing availability and distribution of wildlife habitat. All past, present, and reasonably foreseeable actions listed below were reviewed for their relevancy to the wildlife analysis and their potential effects on wildlife. Those actions vary in their potential for impacts on wildlife, the consequences of potential impacts, the measurability of effects, and how they are measured. Some actions may have impacts, but would have no measurable effects on wildlife that are not factored into the analysis. For example, road maintenance and other present and reasonably foreseeable actions may contribute to disturbance levels but are a part of the impacts measured by miles and density of motorized routes. Also, some actions occur at a level that does not have a measurable effect (such as Christmas trees for personal use) or can't be quantified for measurement because of their variable nature and the inability to predict their extent (e.g. access for fire suppression).

More specific discussions regarding the analysis methodology can be found in the sections on individual species and or habitat.

Table 1: Past, Present & Reasonably Foreseeable Actions Considered for Cumulative Effects for Wildlife

Action	Past	Present	Future	May Have Measurable Cumulative Effects	Explanation
Log Drives	X			No	Log drives would have had minor effects to wildlife or habitat because relatively few streams were affected, and the effects are factored into the existing condition.
Mining	X		X	No	Effects of past mining activities (e.g. creation of bat roosting habitat) have been factored into the existing condition. Potential disturbance effects of future mining would be covered with open road densities.
Railroads	X	X		Yes	Effects of railroad construction (habitat loss) are factored into the existing condition. Represents a potential source of continued mortality for some wildlife species (elk, etc.) due to wildlife/train conditions.
Land Exchanges	X			No	Effects of past land exchanges have been factored into the existing condition.
Pocket Gopher Control	X	X	X	Yes	Addressed in cumulative effects.
Livestock Grazing	X	X	X	No	Potential effects are inconsequential, because they would not result in changes to motorized route densities or substantial habitat modifications.
Motorized Access	X	X	X	Yes	Potential effects are factored into existing

Along District Boundaries					condition and alternative discussions under Canada lynx and Gray wolf.
Emerald Creek Garnet Area Improvements			X	No	Potential effects are localized and inconsequential because of the small area (<10 acres) affected.
Hiawatha Bicycle Trail Operations	X	X	X	No	Potential effects are localized and inconsequential because of the concentrated nature of the non-motorized use.

Action	Past	Present	Future	May Have Measurable Cumulative Effects	Explanation
Timber Harvest	X	X	X	Yes	Effects on habitat (e.g. forest structure and composition) of past timber harvest are measured in existing condition. Effects of ongoing and proposed timber harvest are addressed in cumulative effects.
Tree Planting	X	X	X	No	Effects on habitat (e.g. forest structure and composition) are measured in existing condition. Open road levels would not be affected.
Non-commercial Timber Stand Improvement (thinning and pruning)	X	X	X	Yes	Effects of past precommercial thinning (PCT) on habitat (e.g. forest structure and composition) are measured in existing condition. Potential future PCT addressed in cumulative effects.
Prescribed Burning for Site Preparation and Fuels Treatment	X	X	X	Yes	Effects of past prescribed burning are factored into the existing condition. Future effects are addressed in cumulative effects.
Wildfires	X		unknown	No	Effects of past wildfires on habitat have been factored into the existing condition.
Fire Suppression	X	X	In some areas	Yes	Effects on habitat (e.g. forest structure, composition and snag numbers) are factored into existing condition. Potential future fire suppression addressed in cumulative effects.
Clearing Brush and Trees to Maintain Helispots	X	X	X	No	Potential effects are inconsequential at the district scale because of the small area affected (<1 acre per helispot).
Wildlife Burns	X		X	Yes	Effects on habitat (e.g. forest structure, composition and snag numbers) from past burns are factored into existing condition. Future projects are addressed in cumulative effects.
Road Construction	X		X	Yes	Effects on open road densities and secure habitat from past road construction are factored into existing condition. Effects of ongoing and proposed road construction are addressed in cumulative effects.
Road Decommissioning	X		X	Yes	Effects on open road densities and secure habitat from past road decommissioning are factored into existing condition. Effects of ongoing and proposed road decommissioning are addressed in cumulative effects.
Trail Maintenance	X	X	X	No	Potential effects are minimal and vary – some are not measurable and some are measured by motorized trail miles as part of the existing condition.
In-stream Fisheries Habitat Improvement Projects	X		X	No	Inconsequential effects on riparian wildlife habitat because of the relatively small area affected. (Generally <5 acres per project).

Action	Past	Present	Future	May Have Measurable Cumulative Effects	Explanation
Spraying Herbicides to Control and Prevent Noxious Weeds Under the St. Joe Noxious Weed EIS	X	X	X	No	Potential effects are localized and inconsequential at district scale. This activity would not affect motorized route densities or make appreciable habitat modifications.
Outfitting	X	X	X	Yes	Potential effects are measured by open road miles and secure habitat based on alternative.
Culvert Modification or Replacement	X		X	No	Potential effects are localized and inconsequential because this activity would take place along existing roads.
Road Maintenance	X	X	X	No	This activity does not change public motorized access.
Palouse Divide Ski Trail Maintenance and Use			X	No	Potential effects are localized and inconsequential. Would not result in changes to motorized route densities or consequential habitat modifications.
Public Activities					
Firewood Gathering	X	X	X	Yes	Effect is measured by number of acres (within 200' of open roads) potentially available to firewood cutters. Addressed in direct and indirect effects and in cumulative effects where appropriate.
Use of motorized vehicles (full-size, OHVs, and motorcycles)	X	X	X	No	Potential effects are measured by open route densities.
Camping	X	X	X	No	Potential effects are measured by motorized route densities.
Snowmobiling	X	X	X	Yes	Addressed in cumulative effects.
Hunting	X	X	X	Yes	Addressed in cumulative effects.
Hiking	X	X	X	No	Effects are minimal because virtually all hiking is associated with trails and represented by road and trail densities for each alternative.
Berry Picking	X	X	X	No	Effects are minimal because most picking is adjacent to roads and are represented by open road densities for each alternative.
Fishing	X	X	X	No	Effects are minimal because most fishing is accessed by roads and represented by open road densities for each alternative.
Christmas Tree Cutting	X	X	X	No	Effects are localized and inconsequential because of the relatively minor amount of trees cut each year.
Non-motorized Use of Trails (hiking, biking, livestock)	X	X	X	No	Effects are minimal because this activity does not affect public motorized access.
Bike Riding in Recommended Wilderness	X			No	Effects are minimal because this activity does not affect public motorized access.

Species Relevance Screen

Species for consideration in this analysis were identified from the USDI Fish and Wildlife Service Species List for Idaho Counties (PF WL-63, accessed 5/22/15); the Regional Foresters Sensitive Species List (USDA 2011); MIS from the Forest Plan applicable to the district; other laws, regulations, policies, executive orders, etc.; and scoping comments. Relevance was determined if there is evidence of species occurrence, capable and/or suitable habitat present, and/or potential for the proposals to affect a species or its habitat.

Some wildlife habitat or species identified in lists at a Forest-wide scale (T&E, Sensitive, and MIS) may not occur in the analysis area; may not be impacted; or may be impacted at a level that does not influence use, occurrence, or the decision to be made. These species then do not necessarily require detailed analysis to determine potential effects.

The assessments of the potential for effects made in this relevance screen consider the scope and nature of the proposal and alternatives and the potential risks for adverse impacts.

Species Not Analyzed in Detail

The species listed in the following table would not be affected (or would be affected at a level so insignificant as to not be measurable) by the proposal because: (1) they are not present or expected to be in or near the project area (lack of habitat or outside the range of the species) or (2) the nature and scope of the proposal preclude the potential for effects. Therefore, these species were not analyzed in detail. Preliminary analysis information for species not analyzed in detail is located below (Table 2).

Table 2: Species Not Analyzed in Detail

Species	Preferred Habitat	Rationale for Elimination from Detailed Analysis
Threatened and Endangered Species		
Grizzly Bear (Ursus arctos horribilis)	Large areas of undisturbed habitat. Low elevation riparian areas, meadows, snow chutes, shrubfields, grasslands, and open timbered stands.	Project is outside designated Recovery Zone and known areas of occupied use. The assessment of effects on wildlife connectivity under other species addresses the issue of grizzly bear movement.
Woodland Caribou (Rangifer tarandus caribou)	Mature to old growth forests with dense canopies over a large elevation gradient. High elevation timbered ridges with abundant lichens.	Project is outside designated Recovery Zone and known distribution of the species.
Sensitive Species		
American Peregrine Falcon (Falco peregrinus anatum)	Nest on high cliffs with overhanging ledges near open habitat and an adequate prey base.	No known nests on district. Proposal would not affect suitable habitat or influence use or occurrence.
Bald Eagle (Haliaeetus leucocephalus)	Nest near large bodies of water in areas relatively free from disturbance. Perch sites, roost sites and access to prey are essential components of winter habitat.	Proposal would not affect travel management within ½ mile of any known nest, suitable nesting habitat, or winter habitat.
Black Swift (Cypseloides niger)	Moist cliff environments. They nest behind or next to waterfalls and wet cliffs or in shallow caves.	Species is known to occur on the district. Proposal would not affect travel management within ½ mile of any potential nesting habitat.
Common Loon (Gavia immer)	Large, clear lakes below 5,000 ft. in elevation with at least a partially forested shoreline.	Species not known to occur on the district. Proposal would not affect habitat or influence use or occurrence.
Northern Bog Lemming (Synaptomys borealis)	Bogs, fens and, wet alpine and sub-alpine meadows.	The project area is outside the range of the species in Idaho.
2015 Forest Plan MIS		
Landbird Assemblage	Group of five species with habitats from shrubby, early successional to mature coniferous forests with openings.	Group covered by analysis for other species that use similar habitat components; i.e. elk and black-backed woodpecker.

Threatened and Endangered Species

GRIZZLY BEAR

Habitat Relationships

Quality grizzly bear habitat provides minimum potential for grizzly - human conflicts, sufficient space, isolation from human developments, and diversity of habitats that provide food during different seasons. In northern Idaho, grizzly bears occupy cedar/hemlock, spruce/fir, lodgepole/larch, and shrubfields in the Selkirk Mountains and Cabinet/Yaak ecosystems.

The St. Joe Ranger District is not in a Grizzly Bear Recovery Area (USDI Fish and Wildlife Service 2000), nor was it included in the Bitterroot grizzly bear evaluation area in the Grizzly Bear Recovery Plan Supplement: Bitterroot Ecosystem Recovery Plan Chapter (USDI Fish and Wildlife Service 1996). The district is therefore not expected to provide habitat for grizzly bears that would contribute to population recovery. Some alternatives in the Grizzly Bear Recovery in the Bitterroot Ecosystem FEIS did include the St. Joe Ranger District in an Experimental Population Area (USDI Fish and Wildlife Service 2000); however, no anticipated impacts to land use activities on public land were identified (USDI Fish and Wildlife Service 2000).

Species/Habitat Presence

The southeastern portion of the St. Joe Ranger District is in the Bitterroot Grizzly Bear Primary Analysis Area of the Bitterroot Ecosystem. While there are no verified records or reports of grizzly bears on the St. Joe, in 2007 a grizzly bear was shot and killed in the North Fork Clearwater River drainage south of the St. Joe Ranger District. This bear originated from the Selkirk area north of the St. Joe District. Although the route this bear took between the Selkirk area and where it was shot is not known, one possible route would be the Bitterroot Divide along the Idaho/Montana border. Based on the negative results of camera and hair snare surveys from 2008 and 2009 (Servheen and Shoemaker 2010) and the lack of any recent verified sightings of grizzly bears, there is no reason to believe that there are resident populations of this species in the analysis area (Interagency Grizzly Bear Committee 2007).

Rationale for No Further Analysis

In light of the 2007 grizzly bear shooting the Fish and Wildlife Service has surveyed in the North Fork of the Clearwater drainage and the upper St. Joe drainage to assess if there are any grizzly bears in the area. Although based on current knowledge the potential for grizzly bear occurrence on the St. Joe Ranger District cannot be totally dismissed, there is nothing to suggest any occurrence other than the possibility of transient individuals; with even the potential for that considered to be unlikely. No grizzlies were detected via DNA or by cameras at 91 sites in the Bitterroots during the surveys in 2008-09 (Servheen and Shoemaker 2010). There is no known grizzly bear population occupying the St. Joe Ranger District; and the U.S. Fish and Wildlife Service determined that a resident population of grizzly bears does not exist in the Bitterroot Ecosystem (USDI Fish and Wildlife Service 2000).

The analysis of potential effects on gray wolves and other species includes an assessment of effects on movement/connectivity. These analyses also allow for an assessment of potential effects on movement of other species including grizzly bears. The project area is not within any Bear Management Unit (BMU), linkage zone, or area of known grizzly bear use. Based on the above reasons, this project will have no effect on the grizzly bear. No further analysis or discussion is warranted.

WOODLAND CARIBOU

Habitat Relationships

The woodland caribou population is generally found above 3000 feet elevation in the Selkirk Mountains in Engelmann spruce/subalpine fir and western red cedar/western hemlock forest types. They are highly adapted to upper elevation boreal forests and do not occur in drier low elevation habitats except as rare transients. Seasonal movements are complex and normally occur as altitudinal patterns, moving to traditional sites for different seasons. The Selkirk caribou population was emergency listed as Endangered in 1983 and a final ruling of its status appeared in the Federal Register in 1984 (USDI Fish and Wildlife Service 1994).

Species/Habitat Presence & Rationale for No Further Analysis

The recovery area for the population is in the Selkirk Mountains of northern Idaho, northeastern Washington and southern British Columbia, Canada. The project is not within the Southern Selkirk Mountains Caribou Recovery Area, and there has been no caribou occupation of the St. Joe District for well over 100 years (Evans 1960). Consequently, this project would have no effect on woodland caribou. No further analysis or discussion is warranted.

Sensitive Species

AMERICAN PEREGRINE FALCON

Habitat Relationships

Peregrine falcons are seasonal migrants to northern Idaho, nesting in the northern temperate regions while wintering in the U.S. and southward. They nest on cliffs that are typically higher than 100 feet, with overhanging ledges or potholes and a vertical surface that provide protection from predation. Foraging areas associated with nest sites can include wooded areas, marshes, grasslands, and open water (Craig and Enderson 2004).

Species/Habitat Presence & Rationale for No Further Analysis

There are no known historic eyries on the St. Joe Ranger District. It is possible there may be a limited amount of potential habitat along the breaks above the St. Joe River. While this habitat is steep and rocky, for the most part it does not possess the usual cliff-like appearance and characteristics associated with typical peregrine nesting habitat. The species is not known or suspected to occur in the area. Existing habitat availability, and the nature and scope of the project preclude the potential for effects on habitat or the species. This project will have no impact on this species. No further analysis or discussion is warranted.

BALD EAGLE

Habitat Relationships

Bald eagles occupy riparian or lacustrine habitat almost exclusively during the breeding season (USDI Fish and Wildlife Service 1986). They select isolated shoreline areas with larger trees for nesting, feeding, and loafing. Components of nesting habitat include proximity to sufficient food supply, the presence of dominant trees, and line-of-sight to a large body of water (often within 0.25 mile of water) (Montana Bald Eagle Working Group 1991). Nest sites are commonly distributed around bodies of water >80 acres or major rivers. Bald eagles often forage year round near riffles, runs, and pools of rivers. Bald eagle winter habitat is mostly associated with areas of ice-free water where fish or waterfowl are available as prey.

Species/Habitat Presence

There are no large lakes on the St. Joe Ranger District, and the only streams of considerable size are the lower St. Maries and St. Joe Rivers. There are very few acres of USFS-administered lands along the St. Maries and lower St. Joe (below Avery) Rivers, and the IPNF lacks jurisdiction to close any motorized routes adjacent to these stream reaches. The district's mid-winter bald eagle count consistently detects eagles in the lower and middle portions of the St. Joe River below Avery (PF WL-30). The St. Joe River above Avery receives occasional incidental and opportunistic migrating bald eagle use. However, from Avery upriver to Bluff Creek this stream is closely paralleled by Forest Road 50, which the IPNF similarly lacks authority to close because it provides access to private inholdings. There are no known bald eagle nests in the St. Joe River drainage above Avery, and the portion of the St. Joe River above Bluff Creek is considered to be too far upriver for consistent use as over-wintering habitat. At this location the St. Joe is a small river with low prey densities, and the annual mid-winter bald eagle count does not include this area in its survey due to the low potential for use.

Rationale for No Further Analysis

There are no known bald eagle nests on National Forest System lands on the St. Joe Ranger District. While there is winter use along the St. Joe River downstream of Avery, along with some incidental winter use that may occur along larger streams on the district, the IPNF lacks authority to close any routes adjacent to potential winter roosting habitat. As a result, this decision would not affect bald eagle habitat in any way. Therefore, this project would have no impact on the bald eagles or their habitat under any alternative. No further analysis or discussion is warranted.

BLACK SWIFT

Habitat Relationships

In the western U.S. black swifts' nest on small ledges of cliffs, caves, or other vertical surfaces near or behind dripping water sources, waterfalls, or turbulent spray zones (Wiggins 2004). Six features are strongly associated with black swift nest sites: 1) falling or dripping water, 2) high relief, 3) inaccessibility to ground predators, 4) unobstructed flyways in the immediate nest vicinity, 5) shade during a major portion of the day, and 6) the presence of suitable nest niches (Knorr 1993 in Wiggins 2004). Black swifts feed on insects and forage over forests and in open areas. Risks to the species include: 1) decreases in water flow, 2) recreational use of nest sites (e.g. rock climbers and hikers), and 3) use of pesticides near nesting areas.

Species/Habitat Presence & Rationale for No Further Analysis

Black swift presence has been documented on the St. Joe Ranger District (PF WL-31). Large waterfalls are uncommon, and there are only a few sites considered high-potential habitat. While there are smaller waterfalls on the district that could provide potential nesting habitat, for a variety of factors these generally have low potential for use by black swifts. Travel management would not alter streamflow, reduce vegetative species diversity or increase disturbance. Route status near the known site would remain unchanged under all alternatives. Therefore project activity would have no impact on the black swifts or potential nesting habitat under any alternative. No further analysis or discussion is warranted.

COMMON LOON

Habitat Relationships

Common loons generally nest in clear, fish-bearing lakes surrounded by forest, with rocky shorelines, bays, islands, and floating bogs (McIntyre and Barr 1997). Loons are totally dependent on water because their legs are far towards the rear of their bodies, making it difficult for them to walk on land. For nesting they need lakes with emergent shoreline vegetation and secluded areas for nesting and brood rearing. The species constructs ground nests on islands, floating bog islets, or other protected areas. Because of their need for large expanses of water for takeoff and landing, loons generally occur in lakes larger than 10 acres in size (USDA 1989). They appear to avoid lakes over 5,000 feet in elevation, as these lakes are generally ice covered until late in the breeding season (USDA 1989).

Species/Habitat Presence & Rationale for No Further Analysis

There are no lakes on the St. Joe District that may serve as potential habitat. The species is not known or suspected in the project area. Based on the lack of habitat and occurrence there would be no impact on habitat or the species. No further analysis or discussion is warranted.

NORTHERN BOG LEMMING

Habitat Relationships

Northern bog lemmings are found in sphagnum bogs, wet meadows, moist mixed and coniferous forests, alpine sedge meadows, krummholz spruce-fir forests with dense herbaceous and mossy understory, and mossy stream sides (Streubel 2000). They can be found in small colonies with population densities that may reach 36 individuals per acre (Streubel 2000). Northern bog lemmings feed on grasses, sedges, and other herbaceous vegetation, but also snails, slugs, and other invertebrates (Foresman 2001). Nearly all of the documented occurrences of northern bog lemmings in Idaho, Montana, and Washington have been found in peatlands characterized by extreme abiotic conditions that inhibit the decay of organic materials, allowing the soil to hold large quantities of water and maintain a relatively stable environment for plant and animal species.

Species/Habitat Presence & Rationale for No Further Analysis

The northern bog lemming has a widespread distribution extending from Alaska to Labrador and south to portions of the northern U.S. This species reaches the southern extension of its range in northern Washington and Idaho, and are apparently relatively uncommon in this portion of their range. On the IPNF, they are only known to occur in the far northern ("Kaniksu" Zone) districts. Therefore, this project would have no impact on the northern bog lemming. No further analysis or discussion is necessary.

SNAG/CAVITY HABITAT

The amount of snags and down woody material present has been identified as a measure of forestland integrity (Quigley and others 1996). Snags of varying size, condition, and tree species provide habitat for a variety of wildlife species. The species totally or largely dependent on cavity habitat include some sensitive species (black-backed woodpecker, flammulated owl) and management indicator species (pileated woodpecker).

Species/Habitat Presence & Rationale for No Further Analysis

Existing cavity habitat is a function of past and present disturbances (e.g. fire, insects, disease, and timber harvest), stand initiation, and succession. Providing numbers of snags that have been shown to support viable populations is a prudent approach to managing for sustainable populations of woodpeckers and other species that use snags. Recent studies indicate that viable woodpecker populations occurred in areas with about four snags per acre (Bull and others 1997). Bull and others (1997) recommend providing snags in every 5 to 25 acre stand to satisfy distribution needs. Snags and defective and/or diseased trees are most abundant in mature timbered stands.

The analysis assumes that snags would not be retained, now or in the foreseeable future, in areas within 200 feet of roads open to the public and passable by full-sized vehicles due to personal-use firewood gathering (USDA 2015). Areas outside this 200-foot buffer and unaffected by other vegetation management activities would continue to provide snags at existing levels in the short term, and the number of snags and down woody material in these areas would increase as stands age. Additionally, cutting and gathering of firewood is prohibited within 300 feet of any running stream or wet area or within 25 feet of any seasonally wet areas. Within timber harvest units and areas where other vegetation management activities take place, design features ensure the retention and selection of snags at a level and distribution which has been shown to support viable populations of species that use snags and down logs. Snags and snag replacements would be retained at levels recommended by scientific literature based on recent studies (USDA 2000); and are incorporated as a guideline in the revised Forest Plan (USDA 2015).

The analysis for snag and cavity habitat dependent species such as flammulated owl and black-backed woodpecker will provide analysis of snag and cavity habitat specific to those species. No further analysis is needed.

Management Indicator Species

Management Indicator Species (MIS) were identified in the planning process and were proposed because they represent an issue or concern. The wildlife MIS identified in the 2015 revised IPNF Land Management Plan (LMP) were elk and a landbird assemblage. The landbird assemblage consists of the olive-sided flycatcher, dusky flycatcher, Hammond's flycatcher, chipping sparrow and hairy woodpecker. The landbird assemblage will be used as an indicator for progress towards the desired vegetation conditions and they do not represent other species (i.e. they are not a proxy for other species). The landbird assemblage will be monitored at the Forest-level scale by the ongoing effort of the Integrated Monitoring using Bird Conservation Regions (IMBCR). These wildlife MIS species, elk and the landbird assemblage, were not selected because of a viability concern and their viability will not be analyzed or monitored at the project level (USDA Forest Service 2013b). At the project level, the landbird assemblage would be incorporated into the project analyses to the degree appropriate based on the potential for a measurable effect.

LANDBIRD ASSEMBLAGE

Habitat Relationships

The landbird assemblage consists of five species of insectivores that are considered MIS for vegetation change associated with timber harvest and fuels reduction. This MIS landbird assemblage is to be used to analyze progress towards the desired conditions for vegetation. The landbird assemblage consists of the chipping sparrow, hairy woodpecker, Hammond's flycatcher, olive-sided flycatcher and dusky flycatcher.

The following information comes from the NatureServe database: (http://www.natureserve.org/explorer/index.htm) and the Birds of North America Online database (http://bna.birds.cornell.edu/bna).

The chipping sparrow prefers open, coniferous woodlands, edges near openings, and early-successional forests with shrubs. They feed in low vegetation or on the ground for insects and the seeds of grasses and annuals. The hairy woodpecker uses coniferous forests, including mature forests, along with edges and burned areas. They utilize cavities in snags for nesting. They primarily feed on insects found on the surface or subsurface of trees. The Hammond's flycatcher uses mature coniferous forests that contain canopy openings. They primarily capture aerial insects by flycatching. The olive-sided flycatcher uses open coniferous forests, edges near openings, or early-successional forests if they contain residual conifers or snags to provide singing and foraging perches. They primarily capture aerial insects by flycatching. The dusky flycatcher uses open coniferous forests, open areas with scattered trees, and brushy areas. They primarily capture aerial insects by flycatching.

Species/Habitat Presence & Rationale for No Further Analysis

Suitable habitat for each these species can be found within the St. Joe Ranger District. Surveys conducted by the Idaho Bird Observatory as part of the (IMBCR) detected each of these species in multiple locations on the IPNF in 2012 (Carlisle and Pollock 2012).

General stressors on the landbird assemblage include a decline in large snag availability, fire suppression (resulting in dense young stands, encroachment of conifers into openings and the loss of open forest structure), selective timber harvest with subsequent replanting of closely spaced seedlings, intensive grazing, alteration or loss of wintering habitat, and wind turbines (mortality on migratory birds). These stressors can cause habitat loss, displacement, or mortality throughout their range.

Management activities on NFS lands that have the potential to impact the landbird assemblage include timber harvest resulting in the loss of snags and large trees, fire suppression resulting in the loss of openings and open forest structure, road maintenance and construction due to habitat loss and access for firewood harvest, and recreational use resulting in habitat loss or disturbance.

The population status for chipping sparrow, hairy woodpecker, Hammond's flycatcher and dusky flycatcher is considered to be secure, common, widespread and abundant throughout their range in Idaho. The olive-sided flycatcher is considered to be apparently secure, uncommon but not rare with some cause for long-term concern due to declines or other factors (IDFG 2005).

The potential effects on the species included in the landbird assemblage would be minimal because this travel management project does not treat vegetation; and does not propose activities considered to be the main stressors on these species such as fire suppression, timber harvest, grazing or wind turbines A limited amount of habitat alteration (from firewood harvest) and the potential for disturbance to individuals in the landbird assemblage exists due to the levels of open road system proposed with the alternatives. However, these potential impacts are expected to be minimal and would not retard the attainment or maintenance of the desired conditions for these species. Consequently, this Travel Management project in conjunction with past, present and reasonably foreseeable actions may impact individuals or habitat, but would not indicate a local or regional change in habitat quality or population status. No further analysis or discussion is warranted.

Species Analyzed in Detail

The following table (Table 3) summarizes the wildlife species and wildlife habitat components analyzed in more detail, the rationale for analysis (and conditions that influence the scope of analysis), and a brief description of their habitats.

Table 3: Wildlife Species Analyzed in Detail

Species	Preferred Habitat	Rationale for Further Analysis
Threatened & Endangered		
Canada Lynx (Lynx canadensis)	Sub-alpine fir/spruce habitat or closely associated forests (generally above 4,000') that provide a prey base of snowshoe hare.	Portions of the analysis area lie within Lynx Analysis Units. Known occurrence. Potential impacts associated with human use.
Sensitive		
Black-backed woodpecker (Picoides arcticus)	High densities of recently dead or dying trees. Strong association with early post-fire forests.	Nesting habitat is present and potentially impacted in the analysis area.
Flammulated Owl (Otus flammeolus)	Dry habitat, relatively open mature/old growth ponderosa pine, Douglas-fir forest.	Nesting habitat is present and potentially impacted in the analysis area.
Gray Wolf (Canis lupus)	Large areas with high prey densities and isolation from human activities.	Wide ranging species known to occur in the analysis area. Potential impacts associated with motorized routes.
Harlequin Duck (Histrionicus histrionicus)	Shallow, swift streams in forested areas removed from human disturbance.	Species and habitat present within the analysis area. Potential impacts associated with human disturbance.
Pygmy Nuthatch (Sitta pygmaea)	Dry habitat, ponderosa pine habitat, especially mature-old growth stands.	Habitat is present and potentially impacted in the analysis area. Treated as a guild with flammulated owl.
Fisher (Martes pennanti)	Mesic forested habitats, mature/old growth habitat for denning.	Denning habitat in the analysis area and potentially affected. Known to be present in analysis area.
Fringed Myotis (Myotis thysanodes)	Dry coniferous forests, caves, mines, buildings, large cavities for roosting.	Roosting habitat is present and potentially impacted. Treated as a guild with flammulated owl.
North American Wolverine (Gulo gulo luscus)	Far-ranging omnivorous habitat generalist.	Wide ranging species with reports of occurrences in and adjacent to analysis area.
Townsend's Big-eared Bat (Corynorhinus townsendii)	Caves, mines, and abandoned buildings.	Roosting habitat (e.g. abandoned mines) is present and potentially impacted.
Coeur d'Alene Salamander (Plethodon idahoensis)	Springs, seeps, spray zones with fractured rocks.	Known sites in analysis area. Species may be impacted by road use.
Western Toad (Bufo boreas)	Adults occur in a variety of uplands. Breed in shallow ponds, lakes, or slow moving streams.	Known to be present in analysis area. Potential impacts associated with road use.
Management Indicator Species		
Rocky Mountain Elk (Cervus elaphus nelsoni)	Diverse habitats with seasonal preferences for vegetation.	Species is present and affected by roads/trails.

Issue Indicators

Potential effects, by relevant species, were identified and categorized as discussed in the Analysis Methods section above based on habitat relationships, scientific literature on effects associated with roads and trails, and the proposed alternatives. To analyze potential effects, measurement criteria were developed and are displayed in the following table (Table 4). Measurement criteria are based on the types of potential effects, scientific literature, the proposal, and applicable data.

Table 4: Wildlife Measurement or Evaluation Criteria

Species	Measurement
Threatened and Endangered Species	
Canada Lynx	Motorized route[1] miles in lynx habitat and within Lynx Analysis Units.
Sensitive Species	
Black-backed woodpecker	Miles of open road and acres available for firewood gathering.
Flammulated Owl	Miles of open road in dry habitat and acres available for firewood gathering.
Gray Wolf	Total motorized route miles, motorized route densities, and motorized route densities adjacent to Bitterroot Divide.
Harlequin Duck	Miles of motorized routes within 100 meters of identified breeding streams[2].
Pygmy Nuthatch	Same as flammulated owl.
Fisher	Density of motorized routes by 5th field HUCs, and acres of capable habitat2 available for firewood gathering.
Fringed Myotis	Same as flammulated owl plus number of mines within 200 feet of motorized routes.
North American Wolverine	Miles of motorized routes and motorized route densities.
Townsend's big-eared bat	Number of mines within 200 feet of motorized routes.
Coeur d'Alene Salamander	Miles of motorized routes and number of known sites immediately adjacent to motorized routes.
Western Toad	Miles of motorized routes in project area and within riparian areas.
MIS	
Rocky Mountain Elk	Elk Management Unit % security

[1] Motorized routes include roads and/or trails being used and that are/or will be designated for use by some form of motorized vehicle: single track vehicles, OHVs (<50" wide), and full sized vehicles.

[2]Breeding streams, capable habitat, etc. are identified/defined in the section for each species.

Affected Environment and Environmental Consequences

Threatened, Endangered and Proposed Species

On May 22, 2015, access was made to the U.S. Fish and Wildlife Service list of threatened and endangered species that may be present (by Idaho counties) on the IPNF within the evaluation area (USDI Fish and Wildlife Service 2014a). This list includes woodland caribou (*Rangifer tarandus caribou*) (endangered), grizzly bear (*Ursus arctos*) (threatened) and Canada lynx (*Lynx canadensis*) (threatened). The gray wolf (*Canis lupus*) was removed from the endangered species list in March of 2008, but a court ruling on July 18, 2008 imposed a preliminary injunction on the delisting and reinstated its endangered status in areas north of Interstate 90. However, effective May 4, 2009 the U.S. Fish and Wildlife Service again delisted the Northern Rockies Distinct Population Segment (DPS) of gray wolves. A U.S. District Court decision reinstated federal Endangered Species Act protections for wolves in the Northern Rockies on August 5, 2010. Through Congressional action, effective May 5, 2011 gray wolves were removed from the Federal list of Endangered and Threatened Species (USDI Fish and Wildlife Service 2011). Gray wolves will be placed on the Region 1 Sensitive Species list, and the analysis of effects will be in the sensitive species section of this report. Additionally, as of March 27, 2009 the U.S. Fish and Wildlife Service finalized critical habitat designation for Canada lynx (USDI Fish and Wildlife Service 2009a). No critical habitat was designated on the St. Joe District. On February 4, 2013, the U.S. Fish and Wildlife Service issued a proposed rule to list the wolverine (*Gulo gulo*) as a threatened species (WL53). Critical habitat for wolverine was viewed as being indeterminable at this time (USDI 2013). On August 13, 2014, the U.S. Fish and Wildlife Service withdrew the proposed rule to list the wolverine as a threatened species (USDI 2014). The wolverine will be placed on the Region 1 Sensitive Species list, and the analysis of effects will be in the sensitive species section of this report.

Based on the known distribution of these species, habitat requirements and availability, only the Canada lynx would be affected by the proposed action.

Based on the species relevancy screen discussed previously, there would be no effect on grizzly bear or woodland caribou; and no further analysis for those species is needed.

CANADA LYNX

Habitat Relationships

Canada lynx occur in mesic coniferous forests that have cold, snowy winters and provide a prey base of snowshoe hare (Ruediger and others 2000). In the St. Joe River drainage lynx habitat generally occurs above 4,000 feet in subalpine fir forests or cedar/hemlock habitat types within approximately 200 meters of subalpine fir and spruce habitat types. Habitats that support their primary prey include early successional stages resulting from natural disturbance and timber harvest. Characteristics of foraging habitat include a dense, multi-layered understory that provides cover and browse at ground level and at varying snow depths throughout the winter. Multi-story mature or late successional forests with a substantial understory of conifers or small patches of shrubs and young trees also provide lynx foraging habitat. The common component of natal den sites appears to be large woody debris. Den sites may be located within older regenerating stands or in mature conifer. For denning habitat to be functional it must be in or adjacent to foraging habitat (Ruediger and others 2000).

The Canada Lynx Conservation Assessment and Strategy (LCAS) (Ruediger and others 2000) provides an approach for management of lynx on federal lands; while the Northern Rockies Lynx Management Direction (NRLMD) FEIS/ROD (USDA 2007) incorporates goals, objectives, standards, and guidelines for management of lynx into the IPNF Forest Plan. The LCAS suggests that road use in denning habitat may have adverse effects if lynx are forced to move kittens because of associated human disturbances, but also states that there is no compelling evidence to suggest management of forest/backcountry road and trail density is necessary to conserve lynx. The LCAS also asserts that roads and trails may facilitate snowmobile and other human uses in winter time, allowing competing carnivores access into lynx habitat (Ruediger and others 2000). However, the NRLMD states that there is no conclusive evidence to indicate that compacted snow routes increase competition from other species to levels that adversely affect lynx populations (USDA 2007). There are no NRLMD objectives, standards, or guidelines that apply to travel management per se, but there are guidelines (HU G6 – HU G9) that address upgrading existing roads, road construction, and cutting brush along roads.

Roads in general represent a risk factor to lynx; however, the majority of this risk results from paved roads and highways (see, for example, Apps 2000), which are not affected by this project. Since there is no evidence that lynx avoid or are displaced by unpaved roads, unpaved roads are not considered a threat to lynx movement. Similarly, road density does not appear to affect lynx habitat selection (Ruediger and others 2000). Lynx may tolerate some level of human disturbance, including roads, and most research indicates that lynx do not alter their behavior to avoid humans (Aubry and others 2000; McKelvey and others 2000; Mowat and others 2000; Staples 1995 cited in Mowat and others 2000). Lynx may use little-traveled roadways for travel and foraging in good snowshoe hare habitat, but they prefer to move through continuous forests frequently using ridges, saddles, and riparian areas (Ruediger and others 2000).

While displacement by humans does not appear to be a major factor, access via roads may increase the mortality risk to lynx from incidental trapping. Trapping can be a significant source of mortality for lynx in areas where lynx are legally trapped (Canada and Alaska) (Koehler and Aubry 1994), and some level of incidental take from traps meant for other species may occur on the St. Joe Ranger District. Roads can also directly affect the amount of denning and foraging habitat by removing forest cover (USDA 2007). Forest roads, and to a lesser extent trails, can also make snow compacting activities more likely to occur. Also, although published literature generally does not suggest that forest roads present a barrier to lynx movement, objectives in the NRLMD direct agencies to manage recreational activities to maintain lynx habitat and connectivity (Objective HU O2).

Affected Environment

The St. Joe Ranger District contains lynx habitat, and the presence of lynx on the St. Joe has been documented. However, it is not known if there is a resident population and existing information indicates it is reasonable to expect they occur - at most - in low numbers.

To facilitate project planning, Lynx Analysis Units (LAUs) were delineated (ca. 2000) and re-delineated in 2007-2008 in coordination with the Lynx Biology Team, the USFS Northern Regional Office and the USFWS (project file document WL-04). There are 10 LAUs on the St. Joe District encompassing approximately 279,000 acres with a total of approximately 146,800 acres of mapped lynx habitat within them (Figure 1).

The decision to be made does not include winter or over-snow travel. Since no highway construction or reconstruction is proposed, none of the NRLMD standards, guidelines or objectives associated with new forest highways apply. The discussion focuses on management of existing roads, trails and recreation; and the potential effects on lynx movement, habitat connectivity, and potential for mortality. For the analysis, miles of motorized routes in lynx habitat within LAUs are used as a measure of the potential effects on lynx.

Lynx habitat and delineated LAUs on the St. Joe are generally concentrated in the upper end of the St. Joe River drainage, the upper portion of the Little North Fork of the Clearwater River drainage, and along the Bitterroot Divide. The Stateline Quartz LAU is relatively narrow and parallels the Bitterroot Divide for approximately 20 miles. This LAU was delineated in part to provide connectivity between lynx habitat to the north and the St. Joe. Currently there are approximately 317 miles of motorized routes in lynx habitat.

Most standards and guidelines for management of lynx habitat apply only to federal lands. However, actions on non-federal land may affect access and road use (e.g. use of road in lynx habitat on federal land to access timber harvest activity) in the Little North Fork LAU – the only LAU with private timber company lands with any appreciable miles of road. At this time there are no reasonably foreseeable actions on private timber company land in the Little North Fork LAU, so there would be no reasonably foreseeable effects on lynx associated with private land management activities.

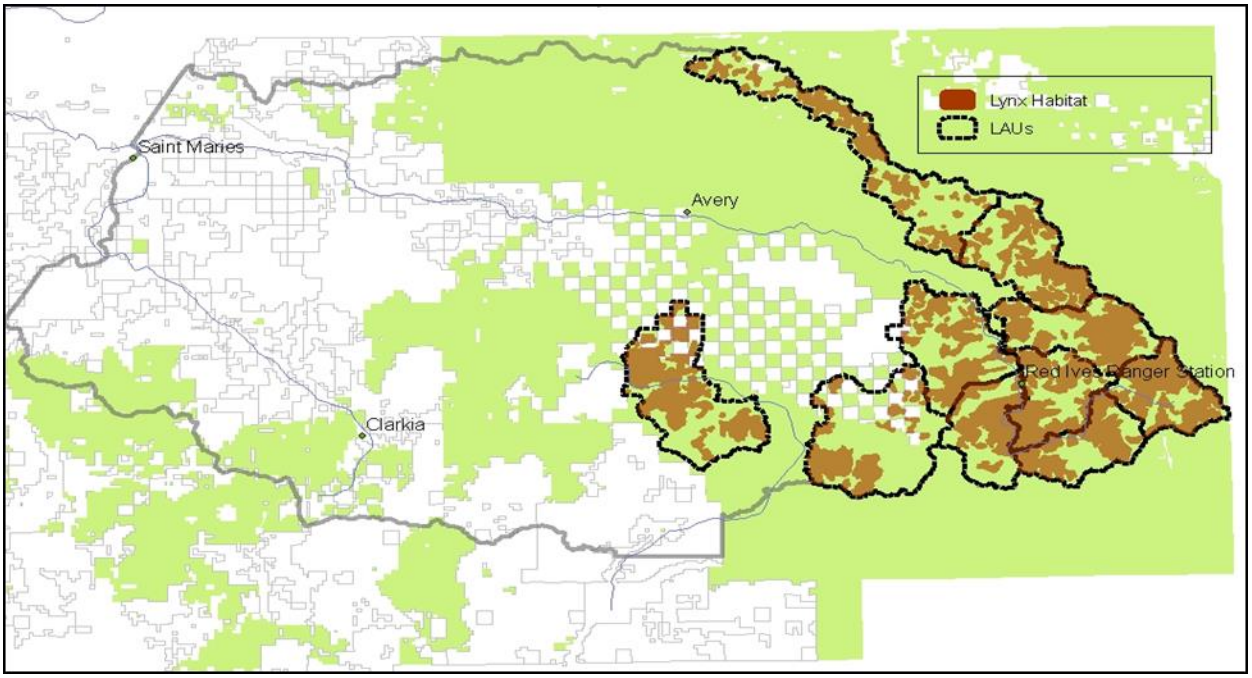

Figure 1: Lynx analysis units (LAUs) and lynx habitat on the St. Joe Ranger District

Environmental Consequences

Direct and Indirect Effects

Motorized route miles in LAUs would decrease under all action alternatives (PF WL-07). Alternatives B, C, and D would also reduce motorized routes in lynx habitat by 20 percent, 12 percent, and 11 percent, respectively. This would reduce the potential for incidental trapping mortality, as well as possible disturbance of denning lynx and the associated risk of mortality to kittens from being moved. Elimination of off-trail motorized use would further reduce potential disturbance at den sites in the action alternatives. Motorized access for dispersed camping would take place in close proximity to existing open roads (300 feet) and motorized trails (100 feet), and most motorized use would occur on existing routes due to the location of existing dispersed sites and surrounding terrain. In recent years we have not had many new user-created routes to dispersed sites, except for little shortcuts to existing sites, and we have been very successful identifying those and discouraging use. In the past 15 years few, if any, new dispersed sites have been created, and no resource concerns have been identified related to dispersed camping sites (REC-21). The steep terrain and heavy vegetation have been deterrents to the proliferation of new dispersed camp sites. The Forest Service intends to identify the other existing dispersed sites and designate access to those sites, so motorized access to dispersed sites would be similar to the existing condition. These routes would be designated as they are evaluated for resource conditions. Therefore, the potential effects of motorized access for dispersed camping would be inconsequential and are represented by motorized route miles.

Table 5: Miles of Motorized Routes in Lynx Analysis Units and Lynx Habitat

Analysis Area	Existing (Alt. A)	Alternative B	Alt. B % Change	Alternative C	Alt. C % Change	Alternative D	Alt. D % Change
LAU motorized route miles	574.1	453.2	-21%	490.1	-15%	495.6	-14%
Lynx habitat motorized route miles	316.5	254.6	-20%	278.5	-12%	281.3	-11%

Cumulative Effects

Pocket Gopher Control – Pocket gopher control will not affect suitable habitat for this species. The nature and scope of the project and the specificity of the treatment preclude the potential for effects because vegetation is not negatively affected by this activity.

Timber Harvest – Ongoing and foreseeable future timber harvest (127 acres in LAUs) (PF WL-10e, WL-10p) may have negative short-term impacts on resident lynx populations during implementation, but it could result in dense regenerating conifers 20-30 years later that support high hare densities. Regeneration harvest generally results in dense early-successional conifer stands, while selectively harvested stands often develop into mature multi-storied stands as regenerating conifers fill in the open spaces where trees are removed. Both of these situations are capable of supporting relatively high densities of snowshoe hares, and, accordingly, Canada lynx (USDA 2007). All ongoing and future timber sales are (or would be) compliant with Standards and Guidelines from the NRLMD.

Non-commercial Timber Stand Improvement – Silvicultural treatments of regenerating stands within lynx habitat, including white pine pruning, weed and release, and shrub control projects, may only be implemented under the restrictions set forth during informal consultation between USFS and USFWS. These treatments are designed so they would have inconsiderable effects on snowshoe hare habitat (cover/forage would be reduced on small percentages of treated areas) (USDA 2007). Juvenile tree ("precommercial") thinning of lynx habitat may only take place under specific circumstances outlined in the NRLMD, and would be limited to 6% of lynx habitat in the planning area (IPNF). As a result, there would be no significant cumulative effects when considered collectively with the proposal because activities in lynx habitat follow the NRLMD.

Prescribed Burning for Site Preparation and Fuels Treatment – This activity would not affect denning habitat for this species or measurably affect prey density. Previously harvested stands generally do not contain adequate habitat complexity for denning, or sufficiently dense understories to support high snowshoe hare densities (Ruediger and others 2000). Permanent firebreaks typically are not constructed, and any firelines bordering units are expected to support vegetation within five years of burning. Measurable cumulative effects would be minimal due to lack of direct or indirect effects and the relatively small scale of this activity in lynx habitat.

Fire Suppression – Continued fire suppression in lynx habitat would help keep potential denning habitat intact, although this habitat component is not thought to be limiting throughout most of lynx range. Since fewer acres would be allowed to burn, fire suppression also has the potential to prevent habitat from reaching an early successional structural stage that would support high densities of snowshoe hares in subsequent years. The amount of future fire and level of successful suppression is impossible to predict, but would generally result in the effects described above.

Road Construction/Decommissioning – Several ongoing or planned projects include system and temporary road construction, reconstruction, or decommissioning. Decommissioning makes roads unavailable for motorized use. The post-project condition of these roads is incorporated into the existing condition for travel planning purposes. Ongoing actions in LAUs would cause temporary fluctuations in the miles of roads with motorized use in lynx habitat although the overall trend has been a reduction in road miles. System and temporary roads constructed for project purposes would not be made available to the public, and so would not facilitate motorized access into lynx habitat (PF WL-10 Fallen Bear EA). The amount of habitat lost through temporary road construction for proposed and ongoing projects would be insignificant (less than 75 acres out of 146,800 acres of the total estimated amount of lynx habitat across the entire district; PF WL-10). As a result, there would be inconsiderable cumulative effects from proposed or ongoing road construction or decommissioning.

Public Activities (firewood gathering, snowmobiling, and hunting) – Personal-use firewood gathering and hunting would not significantly impact Canada lynx as these activities would result in inconsequential changes to forest structure because only snags near open roads are affected, and lynx are not particularly vulnerable to human disturbance (Ruediger and others 2000). The effect of over-snow motorized use on lynx is unknown: while there is a lack of evidence that packed snow trails facilitate competition with other predators, there is evidence that competing predators use packed trails, suggesting a potential effect on individual lynx (USDA 2007). This proposal is not expected to increase over-snow travel above current levels because over-snow travel routes would not change with this project. This is consistent with the Northern Rockies Lynx Management Direction guideline HU G11 concerning snow compaction, therefore snowmobile use is not likely to adversely affect lynx (USDA 2014a). As potential disturbance effects from snowmobile use and wheeled motorized travel occur at different times of year with little overlap; cumulative effects, if any, would be minimized.

Prescribed Burning for Stand and Wildlife Habitat Improvement – These projects will more than double the amount of potential foraging habitat available for lynx in the Red Ives, Simmons and St. Joe Headwaters LAUs as burned stands develop into dense sapling dominated stands 10 to 20 years after burning. The resulting mosaic of these sapling stands with the existing larger timbered habitat should make the project areas and its surroundings more valuable habitat for lynx. There is no road construction or decommissioning, so there are no changes in motorized route density associated with these projects (PF WL-18a Heller Cascade Landscape Burning Project BA, PF WL-58).

Conclusion

The potential effects associated with travel management (i.e. reduction in motorized routes and elimination of cross-country motorized travel) when added to past, present, and reasonably foreseeable future actions would decrease the overall long-term likelihood for direct or indirect mortality, and for disturbance of denning lynx and the associated risk of mortality to kittens from being moved. Because of this, habitat connectivity for this species would be improved under all action alternatives. All alternatives are compliant with applicable Standards and Guidelines of the Northern Rockies Lynx Management Direction. No designated critical habitat would be affected. While the resulting transportation system may have minor effects on individual lynx, none of these effects would rise to a level that would likely cause adverse impacts. As a result, all alternatives may affect but are not likely to adversely affect Canada lynx and would have no effect on Canada lynx critical habitat.

Sensitive Species

USDA Forest Service Policy (FSM 2670) requires a review of programs and activities, through a biological evaluation, to determine their potential effects on sensitive species. Sensitive species are those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by: significant current or predicted downward trends in population numbers or density, or significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution. The 2015 Forest Plan goal for sensitive species is to manage and schedule activities to avoid or minimize disturbance to sensitive species; and manage habitat to promote their perpetuation. The biological evaluation process is intended to analyze and document activities necessary to ensure that Forest Service actions do not contribute to trends toward Federal listing of any species.

Sensitive species on the Regional Foresters list were screened for their relevancy to the wildlife analysis area and the proposal. See the Species Relevance Screen, (Table 75), and the Rationale for No Further Analysis sections earlier in this document.

BLACK-BACKED WOODPECKER

Habitat Relationships

Black-backed woodpeckers are primary cavity nesters that excavate their own cavities, most often in dead or dying trees. They feed on larvae of wood-boring beetles, engraver beetles, and mountain pine beetles (Dixon and Saab 2000). They respond to outbreaks of wood-boring beetles and bark beetles in conifer forests. Black-backed woodpeckers are known to use three types of forested habitats in a wide variety of forest cover and vegetation types: (1) post-fire areas that have burned within 1 to 6 years, (2) areas with extensive bark beetle outbreaks and tree mortality, and (3) smaller scattered patches of dead trees resulting from disturbances such as wind throw and ice damage (Bonn and others 2007).

Black-backed woodpeckers are unlikely to incur direct mortality (collisions) as a result of motorized use. Their high degree of mobility implies that they would not find motorized routes to be a barrier to movement or connectivity, and there is no evidence that human disturbances at nest or foraging sites have negative effects on this species (Dixon and Saab 2000). The key impact to black-backed woodpeckers as a result of this proposal would be potential habitat changes related to personal-use firewood cutting in areas adjacent to roads open to the public that are passable to full-sized vehicles (motorized trails likely do not provide significant firewood gathering opportunities).

Affected Environment

Black-backed woodpeckers are known to occur in the project area. Cutting snags for firewood in forested habitat can reduce the number of dead trees providing potential habitat. The miles of road open to unrestricted motorized use – and therefore with the greatest potential for cutting of adjacent snags for firewood – are used to measure the potential change in habitat.

The existing condition of black-backed woodpecker habitat adjacent to roads is variable - subject to the location of fires (wild and prescribed), insect and disease outbreaks, and other disturbances. Mapping of potentially suitable black-backed woodpecker habitat at the district scale would – at best – provide only a snapshot of existing conditions and would provide information of limited usefulness in determining potential effects or making an informed decision because of unpredictable tree mortality and the ephemeral nature of snags. Instead, the analysis models all USFS-administered lands on the district with sufficient data to determine that they are capable of producing forested habitats (and, consequently, snag habitat) now or in the foreseeable future. The numbers of acres discussed are not intended to absolutely reflect habitat availability, but to demonstrate differences between alternatives and portray amounts of habitat potentially impacted by firewood gathering relative to habitat values on the district as a whole.

There are approximately 1,518 miles of unrestricted ("open") roads on the district that are currently passable to full-sized vehicles, 867 miles of which are on USFS-managed lands and potentially used for personal-use firewood gathering. The level of firewood gathering adjacent to these roads – and the impact on black-backed woodpecker habitat – is variable, dependent on such things as topography, condition of the road, habitat type (e.g. species of tree), the demand for firewood, and the distance of the area from demand. Based on a 200-foot distance for firewood gathering from all open roads (USDA 2015), there are up to 39,496 total acres of National Forest System lands possibly being impacted by firewood gathering on the St. Joe District (PF WL-08). This number represents approximately 6.2% of the total forested lands on the district administered by the IPNF based on a total of approximately 640,900 acres of capable forest habitat (PF WL-09, WL-11). The total acres of capable forest habitat is likely higher than disclosed because there are several thousand acres of habitat lacking stand data, which would be expected to contain additional forested habitat not accounted for in this analysis. Consequently, the percent of total forested lands affected is probably lower since more accessible stands (nearest roads) are more likely to have undergone stand exams and have more exhaustive data. As a result, it is unlikely that 6.2% of capable forested habitat is actually available for personal-use firewood gathering.

Environmental Consequences

Direct and Indirect Effects

Each of the action alternatives would result in small net reductions in miles of open roads accessible by passenger vehicles. This would reduce the potential future effects on black-backed woodpecker habitat from firewood gathering. The extent of this impact on black-backed woodpecker habitat is difficult to quantify because of the variable nature of the disturbances that create habitat relative to the location of unrestricted roads and the variability of effects associated with firewood gathering. However, areas available for firewood gathering that have potential to provide black-backed woodpecker nesting and/or foraging habitat now or in the future would be reduced by about 500 acres in Alternative B, and by approximately 720 acres in Alternatives C and D.

Motorized access for dispersed camping would take place in close proximity to existing open roads (300 feet) and motorized trails (100 feet), and most motorized use would occur on existing routes due to the location of existing dispersed sites and surrounding terrain. In recent years we have not had many new user-created routes to dispersed sites, except for little shortcuts to existing sites, and we have been very successful identifying those and discouraging use. In the past 15 years few, if any, new dispersed sites have been created, and no resource concerns have been identified related to dispersed camping sites (REC-21). The steep terrain and heavy vegetation have been deterrents to the proliferation of new dispersed camp sites. The Forest Service intends to identify the other existing dispersed sites and designate access to those sites, so motorized access to dispersed sites would be similar to the existing condition. These routes would be marked on the ground as they are evaluated for resources. Therefore, the potential effects of motorized access for dispersed camping would be inconsequential and are represented by motorized route miles.

Table 6: Black-backed Woodpecker Comparison of Evaluation Criteria by Alternative

Evaluation Criteria	Existing (Alt. A)	Alt. B	Alt. C	Alt. D
Miles of unrestricted roads	1,517.5	1,505.4	1,506.2	1,506.2
Miles of unrestricted roads (on USFS lands only)	866.5	855.1	850.5	850.5
Acres available for firewood gathering (USFS only)	39,496	38,995	38,880	38,880

Cumulative Effects

Pocket Gopher Control – Pocket gopher control would not affect habitat for this species. The nature and scope of the project and the specificity of the treatment preclude the potential for effects.

Timber Harvest – The effects of past timber harvest are factored into the existing condition, based mainly on size class, canopy closure, and species composition. Current harvest practices ensure the retention and selection of snags at a level and distribution which has been shown to support viable populations of species that use snags and down logs. Ongoing and planned timber sales would affect about 0.1% of the total forested acres on the district (PF WL-10). At this rate of harvest, both mature forest and areas of insect mortality (potential woodpecker habitat) are likely being produced faster than they are being removed.

Non-commercial Timber Stand Improvement (thinning and pruning) - Ongoing and foreseeable thinning activities on 6,400 acres (PF WL-59) of young, small diameter trees would be designed to increase the overall health and vigor of the stands. Since this activity is intended to produce stands with lower densities of larger stems and to reduce tree mortality, it would by definition negatively impact black-backed woodpeckers that prefer high densities of medium-diameter (10-15" dbh.) snags. However, adequate amounts of black-backed woodpecker habitat would continue to be produced on untreated forest habitats throughout the district as a result of endemic levels of insect and disease related tree mortality.

Prescribed Burning for Site Preparation and Fuels Treatment – While this activity would generally have minimal effects on black-backed woodpecker habitat, underburning invariably result in some tree mortality and thus produces additional snag habitat. However, the degree to which this mortality will occur would be extremely difficult to predict or quantify because burn effects are variable.

Fire Suppression - Black-backed woodpeckers have been described primarily as a post-fire obligate species – a species dependent upon habitat that results from a mixed lethal or stand-replacement fire that produces an abundance of snags. Interrupting the periodic disturbances created by lethal wildfires through continued fire suppression retards the emergence of post-fire habitat, but this same activity has contributed to the current conditions that make these stands vulnerable to insect infestation (high densities of small-diameter, suppressed trees). Conversely, if a wildfire occurs in the project area that could not be suppressed, habitat may be enhanced. With the exception of Management Area 1b (recommended wilderness), it is reasonable to assume that active fire suppression may occur on the St. Joe Ranger District in the future. The amount of future fire and level of successful suppression is impossible to predict, but would generally result in the effects described above.

Road Construction/Decommissioning – Several ongoing or proposed projects include temporary and specified road construction, reconstruction, or decommissioning (WL-10). Road decommissioning can decrease access which could reduce snag loss; however, if the road had been open to the public it is likely most snags would already be gone, so there would be little overall short-term effect on black-backed woodpecker habitat. The eventual (post-project) condition of these roads is incorporated into the existing condition for travel planning purposes. While projects with road construction may cause minor temporary increases in road miles for administrative access, these road segments would not be available to the general public and less than 87 acres of habitat would be lost within the road prisms themselves (WL-55). Since black-backed woodpeckers are not sensitive to motorized disturbance and there would be no habitat effects (from personal-use woodcutters) along these roads, there would be no additional cumulative effects for this species.

Public Activities (firewood gathering, snowmobiling, and hunting) – Personal-use firewood gathering is assumed to have removed snags within 200 feet of open roads on the district, and is factored into the existing condition. The potential effects of future woodcutting are used as a measure of alternative impacts and discussed in the Direct and Indirect Effects section above. Snowmobiling and hunting are unlikely to affect this species because the majority of firewood cutting is not associated with hunting and snowmobiling.

Prescribed Burning for Stand and Wildlife Habitat Improvement – The Heller Cascade and Simmons Projects would reduce the amount of existing beetle killed lodgepole pine habitat, but replace it with a nearly equal amount (over 11,000 acres) of suitable burned habitat. At the same time, a substantial amount of current and future beetle killed lodgepole habitat (about 17,350 acres) would be retained in the project areas (PF WL-18, WL-57). Black-backed woodpeckers prefer recently burned timber stands over beetle-killed timber because the insects present in burned stands (woodborer beetles - Buprestidae, Cerambycidae, and Siricidae) are up to four times larger in size than those generally found in beetle-killed stands (bark beetles - Scolytidae) and remain in the trees for a longer time period (USDA 2007). Overall, these projects are expected to improve black-backed woodpecker habitat over the next ten years.

Conclusion

The existing habitat condition for black-backed woodpeckers is a function of the extent of disturbance processes and the management response to those disturbances. As stated previously the impacts of road management on black-backed woodpecker habitat are difficult to quantify. Personal-use firewood gathering is expected to continue where open access exists – on both NFS and non-NFS lands. However, none of the alternatives, in combination with all other ongoing and reasonably foreseeable activities, would result in more than 6.2 percent of potential habitat on the district being affected (PF WL-08, WL-09, WL-11). The action alternatives – via a reduction in unrestricted road miles on NFS land – would reduce the potential for effects on black-backed woodpecker habitat on the St. Joe District from the existing condition (No Action Alternative).

Based on FIA data, approximately 1,033,765 acres of black-backed woodpecker nest habitat exist on the IPNF (Bush and Lundberg 2008), while an estimated 29,405 acres is the critical threshold to maintain a minimum viable population of this species in the Northern Region (Samson 2006b). Samson (2006a) concluded that short-term viability of the black-backed woodpecker in the Northern Region and IPNF would be maintained due to the abundant and well-distributed habitat that exists and the insignificant rate of adverse habitat modification currently taking place. Each of the alternatives would result in a remaining road network that leaves several hundred miles of road open for firewood gathering, and therefore may result in some amount of black-backed woodpecker habitat loss. However, this potential loss equates to a relatively small portion of the district and an inconsequential amount of potential nesting habitat on the IPNF. As a result, these alternatives may impact black-backed woodpeckers or their habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

FLAMMULATED OWL, PYGMY NUTHATCH, AND FRINGED MYOTIS

Habitat Relationships

These three species are associated with similar dry forest habitat and snags/cavities. They are treated as a group with additional attention to the fringed myotis' association with caves.

Flammulated owls are seasonal migrants that occupy home ranges in the northern latitudes during the spring, summer, and fall. Primary nesting habitat is relatively open canopy (35-65 percent overstory canopy closure) ponderosa pine and Douglas-fir forests (McCallum 1994; Hayward and Verner 1994; Howie and Ritcey 1987). Reynolds and Linkhart (1992) reported that all published North American records of nesting, except one, came from forests in which ponderosa pine was at least present, if not dominant. Flammulated owls depend on pileated woodpeckers and flickers to excavate the cavities in which they nest. Their nest trees are at least 12–14 inches in diameter. Their diet includes moths, beetles, grasshoppers, and crickets (McCallum 1994).

Flammulated owls appear tolerant of some human disturbances (Hayward and Verner 1994). This species has been known to nest in campgrounds and other areas of human activity with no apparent adverse effects. Flammulated owls are highly mobile and would not have movements limited by the presence of roads or motorized trails. Direct mortality from collisions with motorized vehicles is not a known risk factor for this species. Because the flammulated owl requires tree cavities for nesting, loss of snags from firewood harvesting can impact nesting habitat for flammulated owls.

Pygmy nuthatches are closely associated with ponderosa pine, especially mature to late-seral stands (Ghalambor 2003; Ghalambor and Dobbs 2006). Species abundance is directly correlated with snag density (i.e. cavity availability). They feed on pine seeds and insects extracted from the bark of trees (Ghalambor 2003; Ghalambor and Dobbs 2006).

No data or literature was found specifically on the effects of motorized access on pygmy nuthatches. It's unlikely this species would be disturbed or displaced from its nesting areas by motorized traffic since they nest in residential neighborhoods in Coeur d'Alene, Idaho (J. Taylor, per. comm.). The main threats to pygmy nuthatches are the loss of ponderosa pine-dominated forests and low snag densities (Ghalambor and Dobbs 2006), both of which are related to the number of miles of open roads.

Fringed Myotis use a fairly broad range of habitats represented by open areas (e.g. grasslands) interspersed with mature forests (usually ponderosa pine, pinon-juniper, or oak) at middle elevations that contain suitable roost sites and are near water sources (Keinath 2004). They feed on insects during flight and glean insects from vegetation, usually near the top of the forest canopy, with beetles and moths making up the majority of their diet (Keller 2000; O'Farrell and Studier 1980; Wisdom and others 2000).

Where available, fringed myotis use caves, mines, buildings, and rock crevices as day, night, maternity and hibernation roost sites (Ellison and others 2004). They also roost underneath the bark and inside hollows of snags, particularly larger ponderosa pine and Douglas-fir snags in medium stages of decay (O'Farrell and Studier 1980; Rabe and others 1998; Weller and Zabel 2001; Rasheed and others 1995). Generally, snags used as roost sites are in somewhat open microsites within otherwise contiguous forest (Weller and Zabel 2001). Because of the short lifespan of snags, bats using snags to roost require a high density of snags and often move between snags while roosting (Weller and Zabel 2001; Rabe and others 1998).

The main risks to fringed myotis are the loss of suitable habitat for foraging or roosting, and human disturbance of roost sites. Fringed myotis, like many bat species, are very sensitive to disturbance or habitat modification and any change in conditions altering the microclimate (e.g. airflow, thermal regime) close to roosts can have a substantial impact (Keinath 2004). Motorized roads may be a concern for fringed myotis because they allow access for firewood cutting, which reduces roost site availability. Open motorized routes also allow relatively effortless human access to abandoned mines, which may disturb fringed myotis at roost sites.

Roads and associated traffic likely do not limit movement or connectivity for this species, nor has mortality from collisions with vehicles been documented. However, indirect mortality is possible from disturbance at maternity colonies before young can fly on their own, or disturbance at hibernacula leading to burning of fat reserves needed for overwinter survival (Rasheed and others 1995). Mortality risk, disturbance/displacement from roosts or hibernacula, and habitat loss through snag removal are assessed by determining the potential effects of disturbance at potential mine roosts and firewood cutting.

Affected Environment

Analysis identified approximately 29,727 acres of capable dry habitat for this species guild on National Forest System lands in the project area (PF WL-12). Other ownerships within the project area mostly consist of Idaho Department of Lands or private industry ownership that are managed for timber production. Since these timber stands are on relatively short rotations, they are usually precluded from reaching suitable habitat conditions for species that require mature forest structure. As a result, other ownerships are highly susceptible to adverse habitat modifications, and the presence of suitable habitat cannot be relied upon over time. Therefore, while other ownerships both outside of and within the IPNF administrative boundary may provide habitat for species analyzed, we lack data to adequately assess these areas, and assume that they are providing no habitat for these species. None of the motorized routes crossing these ownerships are affected by these alternatives.

Cutting snags for firewood in capable habitat for these species may result in habitat loss. The miles of road open for unrestricted motorized use and reasonably passable by full-sized vehicles – where firewood gathering is most likely to occur – in capable habitat is used to measure the potential change in habitat for these three species and the potential for disturbance or mortality of fringed myotis.

On the St. Joe District there are 34.5 miles of unrestricted roads that pass through dry habitat considered capable of providing nesting/roosting habitat for these species. The level of firewood gathering adjacent to these roads – and the impact on habitat for these species – is variable, dependent on such things as: topography, condition of the road, the demand for firewood, and the distance of the area from demand. For analysis purposes, a 200-foot corridor along open roads allocated to personal-use firewood cutters (a more conservative estimate than the 2015 Forest Plan) is used to calculate the potential habitat loss from snag removal. Using these criteria, approximately 1,351 acres of dry-site habitat are currently available to personal-use firewood gatherers (WL-08, WL-12).

While there are no documented sightings of fringed myotis on the district, the information on bat use of old mines on the St. Joe is not comprehensive. Information on the location and suitability of old mines is also not complete. For this analysis the number of mapped mines within 200 feet of motorized routes is used as a relative index of the potential for disturbance of mine roosting bats and effects on fringed myotis. There are 109 mapped mine sites in the project area, 84 of which may be providing potential roost sites for bats (PF WL-17). This includes open adits/shafts or mines with missing information – pits, trenches, cuts and caved adits/shafts were removed from consideration. Of these, 27 are in or adjacent to (within 1/3 mile of) dry site habitat, 13 of which are within 200 feet of motorized routes.

Environmental Consequences

Direct and Indirect Effects

The following table (Table 7) displays the changes in measurement criteria for these species:

Table 7: Flammulated Owl, Pygmy Nuthatch & Fringed Myotis Evaluation Criteria by Alternative

Evaluation Criteria	Existing (Alt. A)	Alt. B	Alt. C	Alt. D
Miles of unrestricted roads in capable habitat	34.5	33.9	34.0	34.0
Dry-site acres available for firewood gathering (USFS only)	1,351	1,333	1,337	1,337
Mines within 200 feet of motorized routes (in or adjacent to dry site habitat)	13	16	16	16

All action alternatives would make only minor reductions in the miles of open roads through dry-site habitat and in the number of dry-site acres available to woodcutters. As a result, the effects on flammulated owls and pygmy nuthatches would be nearly identical for the four alternatives. With respect to fringed myotis, Alternatives B, C, and D would allow motorized access to three more potential roost sites (mines) than Alternative A. However, these sites (two adits and one unknown site) are all associated with the Big Elk mine claim in the Kelly Ridge area. The main mine adit (nearest the road) has a bat gate that prevents human access to the mine; and the other two are shallow or partially caved and have little likelihood of bat use. The road accessing these sites (FR 3472K), although closed, currently may receive some level of OHV (<50" wide) use based upon past experience with gate effectiveness. With some level of motorized use currently going past the bat gate protected mine, it is questionable if changing this road to an OHV (<50" wide) trail under the action alternatives would increase potential effects to this species.

Motorized access for dispersed camping would take place in close proximity to existing open roads (300 feet) and motorized trails (100 feet), and most motorized use would occur on existing routes due to the location of existing dispersed sites and surrounding terrain. In recent years we have not had many new user-created routes to dispersed sites, except for little shortcuts to existing sites, and we have been very successful identifying those and discouraging use. In the past 15 years few, if any, new dispersed sites have been created, and no resource concerns have been identified related to dispersed camping sites (REC-21). The steep terrain and heavy vegetation have been deterrents to the proliferation of new dispersed camp sites. The Forest Service intends to identify the other existing dispersed sites and designate access to those sites, so motorized access to dispersed sites would be similar to the existing condition. These routes would be marked on the ground as they are evaluated for resources. Therefore, the potential effects of motorized access for dispersed camping would be inconsequential and are represented by motorized route miles.

Cumulative Effects

Pocket Gopher Control – Pocket gopher control would not affect habitat for these species. The nature and scope of the project and the specificity of the treatment preclude the potential for effects because the treatments are not in habitat for these species.

Timber Harvest – None of the ongoing or planned timber sales on the district would affect mature dry-site habitat (PF WL-10). As a result, there would be no cumulative additive effects to habitat along with the proposal.

Non-commercial Timber Stand Improvement (thinning and pruning) – Thinning young, small diameter trees would be designed to increase the overall health and vigor of the stands. Additionally, thinning would improve species composition and structure, resulting in stands that are more ecologically resilient in the face of potential disturbances. Consequently, this activity would promote long-term stability of habitat conditions for this species guild.

Prescribed Burning for Site Preparation and Fuels Treatment – This activity may leave shrub and forb understory too depauperate to provide preferred flammulated owl foraging habitat for up to five years after implementation. However based on experience, the ground cover is expected to recover sufficiently, about five to ten years after treatment, to provide habitat for the arthropod species flammulated owls rely upon for foraging.

Fire Suppression – Interrupting the periodic disturbances created by lethal wildfires through continued fire suppression probably has mixed impacts on these species. High-intensity wildfire often reverts stands back to an earlier successional stage. In some cases this would interrupt immature stands from reaching habitat suitability, and in other cases would regenerate stands with high densities of small stems that may never reach suitability lacking disturbance. Regardless, fire suppression through the years has heavily contributed to reduction of open grown ponderosa pine stands by preventing periodic underburns in these stands. Since this activity is expected to continue in most places on the St. Joe, the area will continue to provide marginal habitat for these species.

Road Construction/Decommissioning – Several ongoing or proposed projects include system and temporary road construction, reconstruction or decommissioning (PF WL-10). Road decommissioning can decrease access which could reduce snag loss; however, if the road were open to the public it is likely most snags would already be gone, so there would be little overall effect short-term on snag habitat. The post-project condition of these roads is incorporated into the existing condition for travel planning purposes. System and temporary roads in mature dry-site habitat would not be made available to the public, and so would not result in additional acres available to firewood cutters or facilitate motorized access to additional mine sites (PF WL-10 Fallen Bear EA). As a result, there would only be inconsequential cumulative effects to these species from proposed or ongoing road construction or decommissioning.

Public Activities (firewood gathering, snowmobiling and hunting) – The effects of firewood gathering are measured by the number of dry-site habitat acres (within 200 feet of open roads) potentially available to firewood cutters and was accounted for in the direct/indirect effects discussion. Snowmobiling and hunting would not affect habitat for these species, and would not result in disturbance or mortality. There would be no cumulative effects due to lack of direct or indirect effects.

Prescribed Burning for Stand and Wildlife Habitat Improvement – The Heller Cascade and Simmons Projects are located in the spruce/subalpine fir zone and will not impact flammulated owls, pygmy nuthatches or fringed myotis because they would not treat habitat for these species (PF WL-18, WL-57). There would be no cumulative effects due to lack of direct or indirect effects.

Conclusion

The amount of mature dry habitat for these species is a function of disturbance processes and management. Management (predominantly timber harvest) on non-NFS lands is expected to continue to impact and limit the availability of mature dry site habitat because industrial timber rotations are not designed to produce mature (i.e. >100-year old) timber stands. Management of dry-site habitat on NFS lands would emphasize the maintenance and improvement of mature timbered conditions because these habitats are limited on the St. Joe Ranger District. Based on FIA data, there are an estimated 32,967 acres of flammulated owl habitat on the IPNF (Bush and Lundberg 2008). Samson (2006b) estimated approximately 4,700 acres of habitat would be required to maintain a minimum viable population in the Northern Region. Consequently, Samson (2006a) concluded that short-term viability of the flammulated owl in the Northern Region and the IPNF would be maintained based on the extent and distribution of flammulated owl habitat, lack of evidence of decreasing numbers, and insignificant rate of timber harvest. This amount of dry-site habitat will also sustain viable populations of other species with similar habitat requirements (pygmy nuthatch and fringed myotis).

Personal-use firewood gathering does occur and is expected to continue where open access exists – on both NFS and non-NFS lands. The action alternatives would reduce unrestricted road miles on NFS land, and consequently reduce the potential for flammulated owl, pygmy nuthatch, and fringed myotis habitat alteration from firewood gathering (see Table 7). The No-Action Alternative (which leaves the most road miles available for firewood cutters), in combination with other ongoing and reasonably foreseeable activities, would impact a minor (about 5%) amount of dry-site habitat on the district, and an inconsequential amount of flammulated owl habitat across the IPNF. The smaller number of mines (compared to the action alternatives) more susceptible to disturbance would also reduce the potential for impacts on fringed myotis, although the presence of this species on the district is questionable. While the impacts of the resulting transportation system under all alternatives would be inconsequential, this system would still offer occasions for minor habitat loss for all three species, or for disturbance of fringed myotis at some mine sites. As a result, all alternatives may impact flammulated owls, pygmy nuthatches, or fringed myotis or their habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

GRAY WOLF

Habitat Relationships

Wolves exhibit no particular habitat preference relative to vegetative structure and composition. High prey densities (particularly big game) and isolation from human disturbance characterize quality wolf habitat. Other important habitat features for wolves include den and rendezvous sites (Hansen 1986).

Historically wolves were distributed throughout most of Idaho in unknown populations. Wolf packs of four to ten animals appear to have ranged widely in the mountains of northern and central Idaho. A decline of native ungulates, control programs designed to eradicate wolves and conflicts with livestock and humans caused the decline of wolf populations and led to the absence of a breeding population in Idaho (Hansen 1986).

Wolves are sensitive to road associated factors and motorized road and trails have been used to assess effects on wolves (Gaines and others 2003). When road densities exceed about one mi/mi^2 wolves avoid or are displaced from areas, and the roads appear to pose a barrier to wolf dispersal (Gaines and others 2003). Roads and trails and the human presence they afford increase the potential for human/wolf conflicts that lead to increased mortality risk. The effect of roads and trails on potential elk use is also a measure of prey availability for wolves.

An inadequate prey density and a high level of human disturbance are the main factors that appear to limit wolf population and distribution (Mech 1995). Wolf packs appear to be sensitive to human disturbance near active den sites and depending on the disturbance may abandon the site (Ballard and others 1987). They are also sensitive to human disturbance at rendezvous sites and are most sensitive around the early summer sites (USDI Fish and Wildlife Service 1987). Limiting wolf mortality associated with human/wolf interactions, limiting human disturbance around den and rendezvous sites, and managing for an abundant prey base are keys in the recovery of wolf populations. The density and distribution of open roads provides a good measure for determining the level of risk to wolves from human-caused mortality and disturbance to den and rendezvous sites.

Affected Environment

Wolves are known to occur across the St. Joe Ranger District (IDFG 2012). Since wolves were re-introduced in Central Idaho in 1995 and 1996, numbers have increased in Idaho and on the St. Joe. By the end of 2011 there were an estimated 746 wolves in Idaho, with up to seven known and one suspected wolf packs that included at least a portion of the St. Joe Ranger District within in their territories (IDFG 2012) in the presence of existing motorized route densities. Biological recovery goals have been met since 2002 (IDFG 2012).

The Bitterroot Divide on the St. Joe provides the minimal or low impact characteristics associated with high elevation linkage between habitats (Servheen and others 2003) and has been identified as a potential area of wolf movement (Hansen 1986). For analysis purposes a corridor 500 meters from the border was used to assess effects on movement of wolves (and other species). Miles and density of motorized routes and elk habitat security are used to measure potential effects on wolves elsewhere in the analysis area.

Environmental Consequences

Direct and Indirect Effects

The following table (Table 8) displays the differences between travel management alternatives on measurement criteria for wolves.

Table 8: Gray Wolf Evaluation Criteria by Alternative

Evaluation Criteria	Existing (Alt. A)	Alt. B	Alt. C	Alt. D
St. Joe motorized route miles	3,412	3,176	3,216	3,223
St. Joe motorized route density (mi/mi^2)	1.71	1.59	1.61	1.62
Bitterroot Divide motorized route density (mi/mi^2)	1.14	1.07	1.14	1.14

The No-Action Alternative would not reduce motorized route miles, so existing route densities and motorized cross-country travel would continue to provide the current mortality risk for gray wolf. Alternatives B, C, and D would result in a reduction in motorized route densities of 0.12, 0.10 and 0.09 mi/mi^2, respectively. Alternative B would also lower motorized route density along the Bitterroot Divide by 0.07 mi/mi^2 (PF WL-16). Prohibiting cross-country motorized travel would further lessen the potential impacts of motorized use on wolves. These alternatives would reduce the risk of mortality from human/wolf conflicts, reduce the likelihood of displacement, and improve the opportunity for movement of wolves. Additionally, the action alternatives would result in measurable improvements to elk habitat security (see Table 18), which is expected to enhance availability of prey.

Motorized access for dispersed camping would take place in close proximity to existing open roads (300 feet) and motorized trails (100 feet), and most motorized use would occur on existing routes due to the location of existing dispersed sites and surrounding terrain. In recent years we have not had many new user-created routes to dispersed sites, except for little shortcuts to existing sites, and we have been very successful identifying those and discouraging use. In the past 15 years few, if any, new dispersed sites have been created, and no resource concerns have been identified related to dispersed camping sites (REC-21). The steep terrain and heavy vegetation have been deterrents to the proliferation of new dispersed camp sites. The Forest Service intends to identify the other existing dispersed sites and designate access to those sites, so motorized access to dispersed sites would be similar to the existing condition. These routes would be designated as they are evaluated for resource concerns. Therefore, the potential effects of motorized access for dispersed camping would be inconsequential and are represented by motorized route miles.

Cumulative Effects

Pocket Gopher Control – Gopher control would not have any consequential impact on wolf denning or rendezvous sites, or interrupt habitat linkages or connectivity because it does not affect habitat. The risks of secondary poisoning from this activity are insignificant because poisoned gophers contain low levels of strychnine (<.03 mg per carcass) and are usually found below ground (Evans 1987 in Black 1994). Wolves' primary prey (ungulate) species populations would not be affected because the bait is underground and not available to ungulates. Although this proposal may result in a small increase in potential disturbance levels over the existing condition, this effect would be inconsiderable because of the short-term nature and small scale of this activity, an annual average of approximately 300 acres treated over the last ten years (WL-60).

Timber Harvest – According to the US Fish and Wildlife Service, successful wolf recovery in the northern Rocky Mountains does not depend on land-use restrictions; with the possible exception of temporary restrictions around active den sites on federally managed lands – due to the ability of gray wolves to thrive under a variety of land uses (USDI 2003). Biological recovery goals have been met since 2002 (IDFG 2012). No proposed or ongoing timber harvest would take place in the vicinity of known den or rendezvous sites (WL-10), and each would increase available forage for prey species to some extent. While timber harvest activities could disturb wolves that may be present in the affected area to some extent, this relatively localized disturbance is not expected to influence reproductive success or affect populations of wolves due to their large home ranges.

Non-commercial Timber Stand Improvement (thinning and pruning) – Thinning young, small diameter trees would be designed to increase the overall health and vigor of the stands. This activity would originate from existing roads, so while it may cause a minor disturbance to wolves during implementation, there would be no long-term effects.

Prescribed Burning for Site Preparation and Fuels Treatment – This activity would not measurably affect habitat for this species or prey density because the timber harvest may negatively affect habitat for ungulates, but they are attracted to those areas after the prescribed burns. Fuels treatments may represent a source of disturbance to gray wolves and their prey, but this impact would be likely be confined to a brief time period in any given area, after which use would resume. Since this proposal would not increase motorized access to previously inaccessible areas, there would be no increased mortality risk.

Fire Suppression – Continued fire suppression would help retain forest cover, further contributing to reduction of foraging habitat for prey species (ungulates). However, the effects of fire suppression on ungulate habitat (and, consequently, wolf prey base) are difficult or impossible to quantify.

Road Construction/Decommissioning – Several ongoing or proposed projects include system and temporary road construction, reconstruction, or decommissioning (WL-10). The post-project condition of these roads is incorporated into the existing condition for travel planning purposes. Temporary and system road construction and reconstruction proposed for these projects would not increase mortality risk since these road segments would not be available for public motorized use (WL-10). Potential disturbance from road construction or decommissioning would be inconsequential because of the small percentage of roads involved. As a result, these activities would have an insignificant additive effect.

Public Activities (firewood gathering, snowmobiling, and hunting) – Personal-use firewood gathering, non-motorized recreation, and winter motorized recreation would not significantly impact gray wolves since these activities have minimal effects on habitat and are not expected to increase mortality risk because wolves are unlikely to be encountered during these activities. The effects of potential hunting mortality are addressed by the analysis of motorized route densities.

Heller Cascade Burning – The Heller Cascade and Simmons Projects would not impact any known wolf den or rendezvous site (PF WL-18c Heller Cascade DM, WL-57), consequentially increase the likelihood of human/wolf conflicts, or adversely change the prey base. Use of the project area by elk and deer is expected to increase due to the browse that would be produced as the burned areas revegetate to shrubs, seedlings, and saplings (PF WL-61). Travel corridors would be maintained, and wolf movement should not be affected as the majority of the potential travel corridors are not in proposed units (WL-18d, WL-57).

Actions on non-federal lands, particularly road building and decommissioning have the potential to affect big game use and distribution, and therefore could affect wolves. It is reasonable to expect that some level of logging with associated road work will continue to occur on other timberlands, which could add to effects from the present motorized road system. Information about where, when, or how many miles of road would be built or be decommissioned or whether the roads would be available for motorized use is not known. While this may add slightly to cumulative effects, given the relatively small scale of this activity across the entire district, along with the wide ranging nature of wolves; it is unlikely these effects would rise to a level that would likely cause adverse impacts.

Conclusion

The most important criteria for wolf management are maintenance of an abundant prey base and minimizing the risk of illegal mortality (USDI Fish and Wildlife Service 1987). Biological recovery goals have been met since 2002 (IDFG 2012). The No Action Alternative would not reduce motorized route densities or prohibit cross-country motorized travel. However, wolf populations have steadily increased throughout Idaho in recent years despite existing high motorized densities in many occupied areas. The action alternatives would reduce motorized route density in the project area – Alternative B more so than Alternatives C or D. In addition, the action alternatives would also appreciably reduce potential disturbance and mortality risk by eliminating motorized travel off designated routes. As a result, this proposal may impact gray wolves or their habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

HARLEQUIN DUCK

Habitat Relationships

Harlequin ducks are sea ducks that winter on the ocean and migrate inland to breed. They feed primarily on stream insect larvae in breeding areas. Potential breeding habitat is identified as 2nd-order or larger streams that have reaches averaging 1-7 percent gradient with riffle habitat, clear water, gravel to boulder substrates, and forested bank vegetation (Cassirer and others 1996). Harlequin ducks are primarily affected by disturbance within two "sight distances" (or about 100 meters - depending on density of streamside vegetation) of a nesting stream (Cassirer and others 1996).

The presence of harlequin ducks is considered an indicator of high water quality (USDA 1992). Potential threats in the inland portion of this species' range include activities that affect riparian habitat, water yield, or water quality, and increased disturbance during the breeding season (Cassirer and others 1996). Water quality standards relative to harlequins are primarily to protect their invertebrate food base.

Mortality and disruption of movement as a result of motorized transportation are likely not issues for this species. Habitat loss can occur as a result of stream bank and/or channel alteration, timber harvest or road construction. However, this proposal would not authorize any activities that would reduce habitat quality by eliminating or reducing cover or food supply. Harlequin ducks are reported to be sensitive to human disturbance on breeding streams, particularly during the brood-rearing phase (Cassirer and Groves 1991). This analysis assumes that harlequin ducks may avoid or be displaced by human presence at breeding habitat, most of which is facilitated by motorized access.

Affected Environment

The number of miles of motorized routes within 100 meters of breeding streams is used to measure potential effects on harlequin ducks. The Habitat Conservation Assessment and Conservation Strategy for harlequin ducks in the U.S. Rocky Mountains (Cassirer and others 1996) identified breeding and potential breeding streams in Idaho. On the St. Joe it identified a total of nine streams on NFS lands: three breeding streams (St. Joe River above Avery, Little North Fork Clearwater River, and Marble Creek), one probable breeding stream (Simmons Creek), two streams with unknown breeding (Slate Creek and North Fork St. Joe River), and three potential breeding streams (Bussel, Ruby, and Fly Creeks) (Cassirer and others 1996). Another stream entirely in private and IDL land (Mica Creek) had unknown breeding. Of the nine streams on NFS lands, six have motorized use (open roads, motorized trails or undesignated trails) adjacent to substantial portions of them (St. Joe River, North Fork St. Joe River, Little North Fork Clearwater River, Slate, Marble and Bussel Creeks).

On the St. Joe District about 124 miles of motorized routes are within 100 meters of harlequin duck breeding streams (PF WL-13).

Environmental Consequences

Direct and Indirect Effects

The following table (Table 9) displays the changes in measurement criteria for harlequin ducks.

Table 9: Harlequin Ducks Evaluation Criteria by Alternative

Evaluation Criteria	Existing (Alt. A)	Alt. B	Alt. C	Alt. D
Miles of motorized routes within 100 m of breeding streams	123.6	112.3	117.0	120.6

The action alternatives would reduce the miles of motorized routes adjacent to possible harlequin duck breeding streams, subsequently reducing the potential for disturbance during the breeding season. The differences in mileages between Alternative A and the action alternatives are mostly accounted for by the elimination of motorized use along Fly Cr. and Simmons Cr. (8.5 miles). Alternatives B and C would eliminate motorized use on Trail 629 along Fly Creek (4.8 miles). Under Alternative D this would be a seasonal motorized trail. Since harlequin duck breeding status in Fly Creek is unknown, the effects of this change in trail status on breeding success are questionable. A survey conducted in 2004 indicated that this stream was somewhat narrow in width, shallow, and lacked proper substrate to support duck nesting (PF WL-13). However, the Little North Fork Clearwater is a documented breeding stream that has consistently been occupied by harlequin ducks (PF WL-13), and this species would almost certainly benefit from eliminating motorized use on Trails 13 and 233. Alternative B may additionally benefit harlequin ducks (compared to Alternative C and D) by eliminating motorized use along Simmons Creek (probable breeding) as well as upper Slate Creek (unknown breeding).

Motorized access for dispersed camping would take place in close proximity to existing open roads (300 feet) and motorized trails (100 feet), and most motorized use would occur on existing routes due to the location of existing dispersed sites and surrounding terrain. In recent years we have not had many new user-created routes to dispersed sites, except for little shortcuts to existing sites, and we have been very successful identifying those and discouraging use. In the past 15 years few, if any, new dispersed sites have been created, and no resource concerns have been identified related to dispersed camping sites (REC-21). The steep terrain and heavy vegetation have been deterrents to the proliferation of new dispersed camp sites. The Forest Service intends to identify the other existing dispersed sites and designate access to those sites, so motorized access to dispersed sites would be similar to the existing condition. These routes would be designated as they are evaluated for resource conditions. Therefore, the potential effects of motorized access for dispersed camping would be inconsequential and are represented by motorized route miles.

Cumulative Effects

Pocket Gopher Control – Pocket gopher control will not affect habitat for this species. The nature and scope of the project and the specificity of the treatment preclude the potential for effects.

Timber Harvest – The effects of past timber harvest are factored into the existing condition. There are no ongoing or proposed timber sales that would affect harlequin ducks or their habitat. There are no cumulative effects due to lack of direct or indirect effects.

Non-commercial Timber Stand Improvement (thinning and pruning) - Thinning young, small diameter trees would not affect habitat for this species. The nature and scope of the project and the specificity of the treatment preclude the potential for effects because potential harlequin duck breeding streams would have already been buffered from timber harvest units under INFISH guidelines as specified under the 1987 and 2015 Forest Plans.

Prescribed Burning for Site Preparation and Fuels Treatment – This activity is unlikely to affect habitat for this species, since potential harlequin duck breeding streams would have already been buffered from timber harvest units.

Fire Suppression – High-intensity wildfire has the potential to reduce live tree and shrub cover adjacent to harlequin duck breeding streams and subsequently decrease habitat quality. As a result, fire suppression likely benefits this species in the short term by helping preserve forest cover around breeding streams – although the longer-term effect is to contribute to fuel loading that may result in larger, hotter future wildfires. However, the amount of future fire and level of successful suppression is impossible to predict or measure from a cumulative effects analysis standpoint.

Road Construction/Decommissioning – None of the ongoing or proposed road construction, reconstruction or decommissioning would impact harlequin ducks. There is no proposed road reconstruction or decommissioning near any potential harlequin duck breeding stream. Only road construction authorized under the Bussel 484 ROD is within a drainage identified as a potential breeding stream. However, the proposed construction is not near the drainage bottom or within two sight distances of the stream, doesn't include stream crossings, and would not be designated for public motorized use (PF WL-10d Bussel ROD). There would be no cumulative effects from these activities due to lack of direct or indirect effects.

Public Activities (firewood gathering, snowmobiling, and hunting) – Firewood gathering, snowmobiling, and hunting would not affect habitat for this species or result in disturbance or mortality. On the St. Joe RD firewood gathering is not allowed within 300 feet of any running stream, pond, lake, marshy, or wet area (PF WL-05). There would be no cumulative effects due to lack of direct or indirect effects.

Prescribed Burning for Stand and Wildlife Habitat Improvement – The Heller Cascade and Simmons Burning Projects will not impact harlequin ducks or their habitat because none of the proposed burn units are within ¼ mile of the St. Joe River; and Simmons Cr. is not in either project area (PF WL–18, WL-56). There would be no cumulative effects due to lack of direct or indirect effects.

Conclusion

Existing motorized routes define the present condition in terms of the potential for disturbance of harlequin ducks during the breeding season on the St. Joe District. There are no other reasonably foreseeable actions that would change the miles of motorized routes adjacent to harlequin duck breeding streams.

The potential effects associated with the action alternatives (i.e. reduction in motorized routes) would decrease the overall long-term likelihood for disturbance of harlequin ducks during the breeding season. Remaining roads and trails would continue to present a source of disturbance along some known or suspected breeding streams. As a result, all alternatives may impact harlequin ducks or their habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

FISHER

Habitat Relationships

Late-successional forest is an essential component of forest carnivore habitat. The physical structure of the forest appears to be more important for fisher than the species composition (Ruggiero and others 1994). Fisher prefer late-seral stage coniferous and mixed forest habitat. In Idaho fisher preferred old growth and mature forests in summer and young and old growth forests in winter (Jones 1991). Fisher use riparian habitats as resting sites and extensively for travel, and appear to avoid non-forested areas (Ruggiero and others 1994). Descriptions of fisher habitat include associations with relatively low snow accumulations and lower elevations (Ruggiero and others 1994). Surveys across the district have detected fisher at numerous sites (PF WL-34).

Most studies have found fishers tolerant of moderate degrees of human activity including roads (Heinemeyer and Jones 1994), although Heinemeyer and Jones (1994) identified that roads may indirectly lead to increased trapper access. The trapping vulnerability risk to fisher in areas with trapping (i.e. for bobcat or marten) has been categorized based on road densities as:

- Low: less than .25 mi/mi^2
- Moderate: 0.25 – 1.0 mi/mi^2
- High: greater than 1.0 mi/mi^2

Although fisher cannot be legally trapped in Idaho, they are easily caught in sets intended for other species (such as marten).

Evidence of fisher being displaced by human activities is inconclusive, and there is little reason to believe that movement or habitat connectivity for this species is affected by the presence of roads. Large areas of non-forested or early seral-stage vegetation appear to create more of a barrier to travel than roads (IDFG 1995). No substantial changes to vegetative structure are included in this proposal. Open roads can indirectly lead to some degree of habitat loss by providing access for personal-use firewood cutters, who may remove large snags that fisher could utilize as denning or resting sites. Also, high road densities increase the vulnerability of fisher to trapping mortality (Heinemeyer and Jones 1994).

Affected Environment

Cutting snags for firewood could reduce the amount of down wood and affect habitat for this species. Although it is unlikely to disrupt normal fisher use patterns, this activity could result in fisher habitat impacts adjacent to open roads by removing large snags that represent future dead and down wood denning opportunities. The miles of road open and drivable by full-sized vehicles, and therefore most likely to be used for cutting firewood, are used to measure the potential impact on habitat for these species.

There are approximately 1,518 miles of unrestricted roads able to accommodate passenger vehicles on the district. The level of firewood gathering adjacent to these roads – and the impact on fisher habitat - is variable, dependent on such things as: topography, condition of the road, habitat type (e.g. species of tree), the demand for firewood, and the distance of the area from demand. Based on a 200-foot distance for firewood gathering from all unrestricted roads (USDA 2015), there are up to approximately 39,496 total acres possibly being impacted by firewood gathering on the St. Joe District. Of these, up to 33,049 acres represent capable habitat for fisher (dry sites stands and permanent openings eliminated) (PF WL-14). Currently, approximately 16,724 of these acres have mature or old-growth structure and could potentially be used as denning habitat (PF WL-09, WL-11). The actual number of acres available for firewood gathering is somewhat less than these figures since firewood cutting is prohibited in areas within 300 feet of any water body.

As discussed above, high road densities can lead to trapping mortality for fisher. One of the management strategies for fisher (Heinemeyer and Jones 1994) includes classifying major watersheds for their trapping-vulnerability risk based on road densities. The density of motorized routes by 5th field HUC (Figure 2) is used to measure trapping vulnerability and potential effects on fisher.

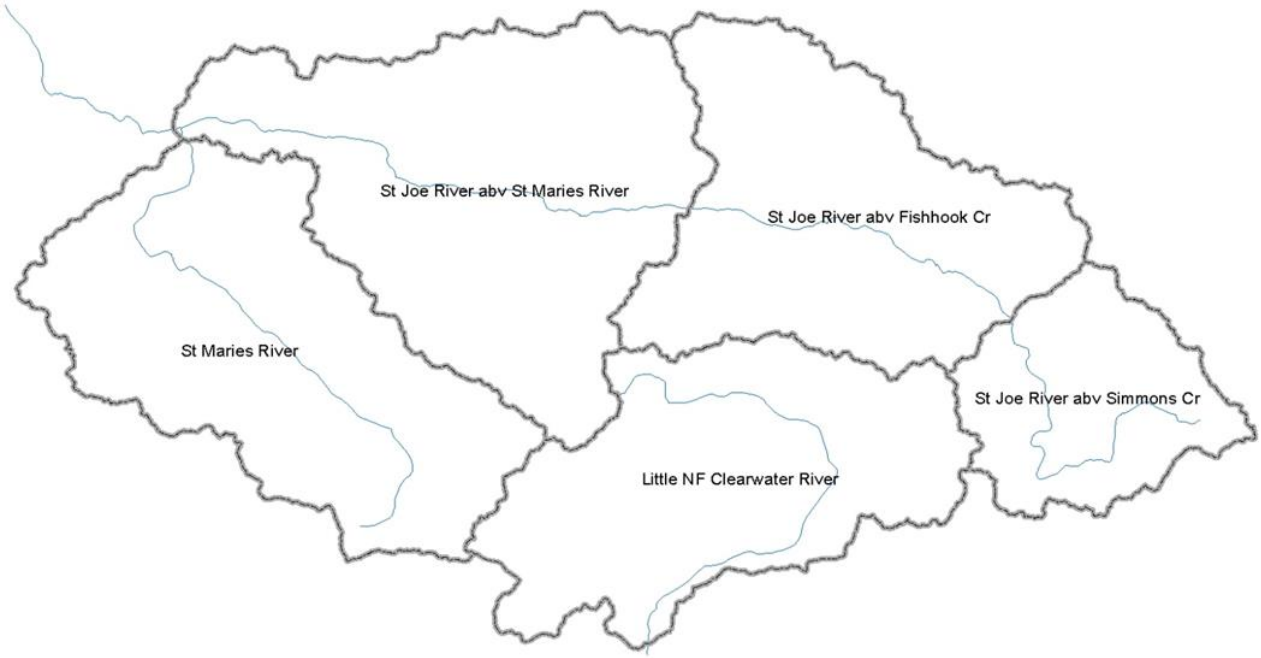

Figure 2: Map of 5th Code Hydrologic Units

The following table (Table 10) displays the existing motorized route densities by 5th field HUC.

Table 10: Existing Motorized Route Densities by 5th Field Hydrologic Unit

Watershed	Watershed size (square miles)	Existing motorized route density (mi/mi^2)	Risk Classification
St. Joe River above Simmons Creek	203.95	0.88	moderate
St. Joe River above Fishhook Creek	431.50	1.99	high
St. Joe River above St. Maries	548.201	2.292	high
St. Maries River	451.511	1.602	high
Little N.F. Clearwater River	368.261	1.05	high

1 - Portion of watershed is outside the project area.

2 - Road densities likely underestimated due to incomplete information from other ownerships.

Environmental Consequences

Direct and Indirect Effects

Four of the five watersheds have a "high" risk classification, three of which would continue under all alternatives. The action alternatives would make improvements to all watersheds, although motorized route density decreases would be less pronounced in the St. Maries and lower St. Joe (between St. Maries River and Fishhook Creek) watersheds due to the high amount of non-USFS ownership in these areas. The Little North Fork of the Clearwater River would improve to "moderate" risk classification under all action alternatives. The end result is that the vulnerability of fisher to trapping mortality would be decreased under the action alternatives. However, trappers reported accidently taking only two fishers from the Panhandle Region (which encompasses nearly the entire Idaho Panhandle National Forest and includes the St. Joe Ranger District) during eight trapping seasons between 2000-2008 (http://fishandgame.idaho.gov/cms/hunt/fur/county.cfm 5/29/09). This implies that trapping is a relatively minor mortality source in this population. The Fish and Wildlife Service has concluded "that the potential exists for targeted or incidental trapping to negatively impact fisher populations, but based on the available information this potential does not rise to the level of threat at this time" (USDI 2011a).

The following table (Table 11) displays the changes in motorized route density by 5th field HUC.

Table 11: Changes in Motorized Route Density by 5th Field HUC for the Alternatives

Watershed	Motorized Route Density (mi/mi^2)			
	Existing (Alt. A)	Alt. B	Alt. C	Alt. D
St. Joe River above Simmons Cr.	0.88	0.69	0.77	0.81
St. Joe River above Fishhook Cr.	1.99	1.76	1.82	1.82
St. Joe River above St. Maries	2.29	2.21	2.18	2.18
St. Maries River	1.60	1.56	1.57	1.57
Little North Fork Clearwater River	1.05	0.95	0.97	0.97

Currently, about 33,000 acres of capable fisher habitat (excluding non-forested areas and dry sites) are within 200 feet of open roads and are available to personal-use woodcutters, or would be in the future under the no-action alternative. Of these, nearly 17,000 acres are in a mature structural stage and potentially provide denning habitat. The action alternatives would bring about slight (less than 1 percent) reductions in the number of total capable and mature forest capable acres available to woodcutters.

The approximately 16,724 acres of mature capable habitat accessible to woodcutters represents only 5 percent of capable mature forest district-wide (approximately 334,450 acres) (PF WL-09, WL-14). In all likelihood, some of these acres would supply denning habitat for the foreseeable future for several reasons: road segments that are great distances from populated areas are unlikely to be heavily utilized by woodcutters, not all snags within 200 feet of the roads will be taken due to topographic or other limitations, personal-use firewood permit prohibits cutting and gathering of firewood within 300 feet of any running stream or wet area or within 25 feet of any seasonally wet areas, and most "soft" (moderately decomposed) snags that currently or will soon provide denning/resting habitat would not be taken by woodcutters since they have limited value as firewood. As a result, the potential habitat loss under even the alternative with most impact, (No Action) is unlikely to considerably impact fisher viability.

The following table (Table 12) displays potential effects of firewood cutting in capable habitat by alternative.

Table 12: Effects of Firewood Cutting in Capable Habitat by Alternative

Evaluation Criteria	Existing (Alt. A)	Alt. B	Alt. C	Alt. D
Capable habitat acres available for firewood gathering (USFS only)	33,049	32,669	32,586	32,586
Mature forest capable acres available for firewood gathering (USFS only)	16,724	16,588	16,571	16,571

Motorized access for dispersed camping would take place in close proximity to existing open roads (300 feet) and motorized trails (100 feet), and most motorized use would occur on existing routes due to the location of existing dispersed sites and surrounding terrain. In recent years we have not had many new user-created routes to dispersed sites, except for little shortcuts to existing sites, and we have been very successful identifying those and discouraging use. In the past 15 years few, if any, new dispersed sites have been created, and no resource concerns have been identified related to dispersed camping sites (REC-21). The steep terrain and heavy vegetation have been deterrents to the proliferation of new dispersed camp sites. The Forest Service intends to identify the other existing dispersed sites and designate access to those sites, so motorized access to dispersed sites would be similar to the existing condition. These routes would be marked on the ground as they are evaluated for resources. Therefore, the potential effects of motorized access for dispersed camping would be inconsequential and are represented by motorized route miles.

Cumulative Effects

Pocket Gopher Control – Pocket gopher control will not affect habitat for fisher. The nature and scope of the project and the specificity of the treatment preclude the potential for effects because timbered vegetation is not affected by this activity.

Timber Harvest – The U.S. Fish and Wildlife Service has concluded "that the best available scientific and commercial information does not indicate that current or future forest management practices and timber harvest threaten the fisher now, or in the foreseeable future" (USDI 2011a). Timber harvest activities associated with ongoing or proposed timber sales would affect approximately 2,008 acres of mature forest suitable fisher habitat (PF WL-10, WL-55). This represents a minute amount (approximately 0.6 percent) of capable mature forest habitat on the district. Potential effects of road construction from these projects are discussed below.

Non-commercial Timber Stand Improvement (thinning and pruning) – Thinning young, small diameter trees would be designed to increase the overall health and vigor of the stands. This is expected to produce lower densities of large diameter trees, potentially improving fisher denning habitat.

Prescribed Burning for Site Preparation and Fuels Treatment – This activity is unlikely to affect denning habitat for these species, as previously harvested areas and seral brushfields typically do not contain dense canopy cover and complex understories preferred by these species. As a result, the effects of this activity would be insignificant or inconsequential.

Fire Suppression – Fire suppression activities are generally good for fisher habitat, as they protect denning habitat from stand-replacing fire and contribute to understory congestion in dry-site stands that provide cover for small mammals that fishers prey upon. As a result, fire suppression may benefit this species in the short term by helping preserve mature forest cover – although the longer-term effect is to contribute to fuel loading that may result in larger, hotter future wildfires that reduce forest cover and denning habitat.

Road Construction/Decommissioning – Several ongoing or proposed projects include temporary and system road construction, reconstruction, or decommissioning. The post-project condition of these roads is incorporated into the existing condition for travel planning purposes. Temporary and system road construction proposed for timber sale projects would not increase mortality risk since these road segments would not be available for public motorized use, and would be closed after activities cease (PF WL-10). Potential disturbance from road construction or decommissioning would be inconsequential because most roads to be decommissioned were already unavailable for motorized use. As a result, these activities would have an insignificant additive effect.

Public Activities (firewood gathering, snowmobiling and hunting) – The effects of firewood gathering are measured by number of capable habitat acres (within 200 feet of open roads) potentially available to firewood cutters. Snowmobiling has not been demonstrated to trigger a measurable adverse reaction by this species (USDI 2011a), and the possibility of the use of snowmobiles to facilitate trapping access is discussed above. Hunting would not affect habitat or result in disturbance or mortality. There would be no additional cumulative effects from these activities other than those discussed above.

Prescribed Burning for Stand and Wildlife Habitat Improvement – The Heller Cascade and Simmons Burning Projects will only impact approximately 3,061 acres of mature forest, none of which were identified as denning habitat (PF WL-18c, WL-57). Motorized access will not change during or after either projects implementation. Since these projects affects less than 0.6 percent of fisher habitat on the IPNF (Bush and Lundberg 2008), the incremental additive effect to this proposal would be insignificant and inconsequential.

Conclusion

The U.S. Fish and Wildlife Service recently concluded that fisher in the Northern Rocky Mountains are not likely to become endangered within the foreseeable future throughout all or a significant portion of its range (USDI 2011a). All action alternatives would make minor improvements to fisher habitat on the district by decreasing the miles of motorized routes (and, by proxy, trapping vulnerability) and by reducing the acres of potential denning habitat available to personal-use firewood cutters. Although several of the affected watersheds have a "high" risk classification under all alternatives, trapping is not likely a considerable source of mortality for fisher populations. The Fish and Wildlife Service has concluded "that the potential exists for targeted or incidental trapping to negatively impact fisher populations, but based on the available information this potential does not rise to the level of threat at this time" (USDI 2011a). Personal-use firewood cutting, in addition to all other ongoing and reasonably foreseeable activities, would not impact more than 5.25 percent of potential denning habitat district-wide.

Based on FIA data, there are an estimated 1,193,893 acres of fisher winter habitat and 520,415 acres of fisher summer habitat on the IPNF (Bush and Lundberg 2008). Samson (2006b), citing Smallwood (1999), asserts that the threshold habitat level to maintain a viable fisher population is approximately 100,084 acres (405 km2), or about 1/5 of the available summer habitat on the IPNF. The cumulative effect of all ongoing and reasonably foreseeable projects on the St. Joe Ranger District would result in modifications to an inconsequential (about 6 percent of summer habitat) amount of this total, and more than three times the threshold habitat level would remain on the district. However, since remaining roads and trails may indirectly result in occasional mortality or small amounts of habitat loss, all alternatives may impact fisher or their habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

WOLVERINE

Habitat Relationships

Wolverines are low-density, wide-ranging species associated with high elevations and isolation from human activity (Aubry and others 2007; Lofroth and Krebs 2007). Habitat requirements for wolverines include availability of seasonal food, suitable habitat for reproduction, and an apparent avoidance of human activity (Banci 1994). In central Idaho wolverines feed on carrion of large mammals such as elk and deer (Copeland 1996). Snow cover that persists through the denning period appears to influence the distribution of wolverines; and may provide thermal benefits, protection from predators, or proximity to high quality rearing habitat (Aubry and others 2007).

Roads and human density are important factors influencing current wolverine distribution (Carroll and others 2001); and wolverine habitat selection is negatively correlated with human activity – including roads (Krebs and others 2007). Wolverine occurrence has shown a negative relationship with road densities greater than 2.8 mi/mi^2 (1.7 km/km2) (Carroll and others 2001). However, it is unclear if this stems from actual avoidance or the fact that most preferred habitat features are in steep, high elevation areas that are normally unroaded – and a causal relationship has yet to be established (Copeland and others 2007). Habitat loss for wolverine as a result of motorized transportation is an inconsiderable effect; and the evidence is inconclusive if wolverines avoid or are displaced by roads, or if roads serve as barriers to movement or connectivity. The U.S. Fish and Wildlife Service has found it unlikely that wolverines avoid the type of low-use forest roads that generally occur in wolverine habitat (USDI 2013).

Nonetheless, the presence of roads can be directly implicated in human-caused mortality (trapping) of this species. Trapping was identified as the dominant factor affecting wolverine survival in a Montana study (Squires and others 2007). Although wolverine cannot be legally trapped in the project area, prior to 2014 trapping was legal in Montana (PF WL-62) (adjacent to the St. Joe River drainage); and the State of Idaho offers a reward for trappers who report accidental capture of this species (implying that some level of inadvertent wolverine trap mortality occurs in Idaho). While most trapping is done from over-snow vehicles, roads and occasionally trails often provide breaks in forest vegetation that can facilitate over-snow vehicle use (and trapper access).

Affected Environment

Wolverine presence has been reported in and adjacent to the project area. Elevations, snow persistence and human activity levels vary across the district. For example, human presence/activity levels are higher in such areas as around Clarkia and in areas of mixed ownership (e.g. more intensive timber management and road densities); and lower in roadless areas. Road density has been used to evaluate wolverine habitat (Carroll and others 2001; Lofroth and Krebs 2007). For this analysis, motorized (roads and trails with public motorized use) route densities by alternative are used to compare differences in effects of human activity on wolverine habitat. The current density of all motorized routes on the St. Joe District is approximately 1.7 mi/mi^2.

Environmental Consequences

Direct and Indirect Effects

The following table (Table 13) displays the changes in measurement criteria for wolverine.

Table 13: Wolverine Evaluation Criteria by Alternative

Evaluation Criteria	Existing (Alt. A)	Alt. B	Alt. C	Alt. D
St. Joe motorized route miles	3,412	3,176	3,216	3,223
Motorized route density in project area (mi/mi^2)	1.71	1.59	1.61	1.62

Alternatives B, C, and D would result in 7, 6, and 6 percent reductions in motorized routes on the district, respectively. This is expected to reduce the potential for inadvertent trapping mortality of wolverines somewhat. Motorized access in the vicinity of potential maternal den sites would remain mostly unchanged, with access lost to only a single site under Alternative B compared to Alternatives A, C, and D (PF WL-15). Route densities on National Forest System lands would remain at or below about 1.7 mi/mi^2 under all alternatives. While some areas (particularly in mixed ownership) may have somewhat higher route densities on a local scale, they are unlikely to approach the 2.8 mi/mi^2 threshold because that would require a 65 percent increase in motorized route density. Overall, the increased security provided by the action alternatives would improve wolverine habitat. Reductions in motorized route densities would also improve habitat for elk (and other ungulates), resulting in a more abundant prey base for wolverine.

Motorized access for dispersed camping would take place in close proximity to existing open roads (300 feet) and motorized trails (100 feet), and most motorized use would occur on existing routes due to the location of existing dispersed sites and surrounding terrain. In recent years we have not had many new user-created routes to dispersed sites, except for little shortcuts to existing sites, and we have been very successful identifying those and discouraging use. In the past 15 years few, if any, new dispersed sites have been created, and no resource concerns have been identified related to dispersed camping sites (REC-21). The steep terrain and heavy vegetation have been deterrents to the proliferation of new dispersed camp sites. The Forest Service intends to identify the other existing dispersed sites and designate access to those sites, so motorized access to dispersed sites would be similar to the existing condition. These routes would be marked on the ground as they are evaluated for resources. Therefore, the potential effects of motorized access for dispersed camping would be inconsequential and are represented by motorized route miles.

Cumulative Effects

Pocket Gopher Control –The nature and scope of the project and the specificity of the treatment preclude the potential for effects on wolverine because treatments are generally at lower elevations than usually frequented by wolverines.

Timber Harvest – Since wolverines utilize a variety of habitats, changes to vegetation as a result of timber harvest activities associated with ongoing or proposed timber sales would be inconsequential. The effects on potential prey base are represented by elk security calculations and are incorporated into the existing condition. Potential effects of road construction from these projects are discussed below.

Non-commercial Timber Stand Improvement (thinning and pruning) - Thinning young, small diameter trees would not affect habitat for this species because wolverines are not dependent on any specific habitat. The nature and scope of the project and the specificity of the treatment preclude the potential for effects.

Prescribed Burning for Site Preparation and Fuels Treatment – This activity would not affect habitat for this species or measurably affect prey density because it treats habitat that has already been altered. There would be no cumulative effects due to lack of direct or indirect effects.

Fire Suppression – High-intensity wildfire would generally improve conditions for ungulates and subsequently increase the wolverine prey base. As a result, fire suppression is likely detrimental to this species as it contributes to dense forest cover and reduces ungulate forage over time. However, the effects of fire suppression on ungulate habitat (and, consequently, wolverine foraging) are difficult or impossible to quantify.

Road Construction/Decommissioning – Several ongoing or proposed projects include system and temporary road construction, reconstruction, or decommissioning. The post-project condition of these roads is incorporated into the existing condition for travel planning purposes. Temporary and system road construction proposed for these timber sale projects would not be in the vicinity of potential natal denning habitat because they are at lower elevations and would not increase mortality risk since these road segments would not be available for public motorized use (PF WL-10). Potential disturbance, in the form of displacement or avoidance, from road construction or decommissioning would be inconsequential because of the small percentage of roads involved. As a result, these activities would have an insignificant additive effect.

Public Activities (firewood gathering, snowmobiling, and hunting) – Firewood gathering would have inconsiderable effects on wolverine because they are not a snag-dependent species. Hunting would not affect habitat for this species, and is unlikely to result in disturbance or mortality because as a low-density species wolverine are extremely unlikely to be encountered by hunters. The presence of winter recreation activities, particularly motorized activities, within potential wolverine denning habitat may result in habitat being avoided by wolverine during the initial denning period or may result in displacement of wolverine with young if activity occurs during the active denning period. The changes in access as a result of this project would increase the security of wolverine habitat based on a decrease in the miles of drivable roads on the district. "The best scientific information available does not substantiate dispersed recreational activities as a threat to wolverine." (USDI 2014)

Prescribed Burning for Stand and Wildlife Habitat Improvement – The Heller Cascade Landscape Burning and Simmons Projects will not change motorized access or available elk security habitat. No potential wolverine maternal denning habitat will be affected, and the disturbance associated with the burning is expected to have an inconsequential effect on wolverines due to their wide-ranging nature in concert with their lack of dependency on any specific habitat. It is expected that the burns would improve conditions for big game by creating some early seral forage (PF WL-18, WL-57), and consequently improve conditions for wolverines.

Conclusion

The action alternatives would reduce motorized route density in the project area. Alternative B would result in somewhat fewer motorized route miles than Alternatives C or D, and would eliminate motorized access to a potential maternal denning area. However, even under the No-Action Alternative, motorized route densities do not approach the 2.8 mi/mi^2 threshold identified by Carroll and others (2001) as negatively influencing wolverine occurrence. Under all alternatives, the remaining motorized route density may pose a mortality risk for wolverine by providing trapper access – although this occurrence is likely infrequent in nature. As a result, the alternatives may impact wolverines or their habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species. Furthermore, the U.S. Fish and Wildlife Service has concluded that "the available scientific and commercial information does not indicate that other potential stressors such as land management, recreation, infrastructure development, and transportation corridors pose a threat to the DPS". Additionally, critical habitat for wolverine was viewed as being indeterminable at this time (USDI 2013).

TOWNSEND'S BIG-EARED BAT

Habitat Relationships

Townsend's big-eared bats are primarily cave-dwelling species. Although they occur in a wide variety of habitats, distribution tends to be correlated with the availability of caves, especially old mine workings (Pierson and others 1999). Their behavior appears, in most cases, to be temperature driven with bats using cooler sites before the young are born and moving to warmer sites after giving birth. In spring and summer, females form maternity colonies in warm parts of caves, mines, and buildings. In winter, they prefer relatively cool places for hibernation, often near entrances and in well-ventilated parts of caves and mines (Kunz and Martin 1982).

Townsend's big-eared bats occur throughout much of the western North America, from British Columbia to Mexico, and eastward to Texas (Pierson and others 1999). Throughout much of their range they are recognized as a species at risk. They are currently listed as a USFS Region 1 Sensitive Species and are considered species of special concern by most western states' wildlife management agencies. Records of Townsend's are found throughout Idaho. The most serious factor leading to population declines is loss and/or disturbance of suitable roosting habitat. Notable threats include abandoned mine closures, recreational caving, and renewed mining at historical sites (Pierson and others 1999). These activities are generally facilitated by roads or trails that provide relatively effortless motorized access to mine sites.

Similar to fringed myotis, movement and habitat connectivity for Townsend's big-eared bats is likely not limited by the presence of motorized traffic; and direct mortality resulting from collisions with vehicles is not documented. In addition, snags appear to be a relatively minor habitat component for this species (Pierson and others 1999 state that "C. townsendii also requires a relatively spacious roost"), so personal-use firewood cutting is not expected to have pronounced effects. However, like many species of bats, Townsend's are highly sensitive to disturbance at roost sites (particularly maternity roosts and hibernacula), which can result in abandonment of preferred habitat or indirect mortality. The risk of mortality and disturbance displacement from roost sites is assessed by determining the number of mapped mines within 200 feet of motorized routes.

Affected Environment

Although Townsend's big-eared bat presence has not been documented on the St. Joe Ranger District, it is possible that this species could occur in the project area. As discussed in the fringed myotis section, there are 84 mapped mine sites in the project area that have potential to provide roost sites for bats. Forty-six of these are within 200 feet of open motorized routes. Abandoned mine inventory on the district is not exhaustive, and some of the mapped sites that lack data may not be providing bat habitat due to collapsed adits/shafts, improper structure (pits or cuts) or other environmental factors. Nonetheless, the number of mapped sites potentially providing habitat adjacent to open motorized routes should present a relative assessment of the effects of the various alternatives. The 200-foot distance has no particular significance for bat species, but it is chosen to represent a distance beyond which motorized recreationists are less likely to routinely walk. Based on the average density of vegetation on the St. Joe RD and the steep topography, mines are unlikely to be seen or walked to if they are over 200 feet from an open road or trail.

Table 14: Townsend's Big-Eared Bat Evaluation Criteria by Alternative

Evaluation Criteria	Existing (Alt. A)	Alt. B	Alt. C	Alt. D
Number of mines within 200 feet of motorized routes	46	39	39	39

Environmental Consequences

Direct and Indirect Effects

Motorized access would still be available to the 46 mine sites within 200 feet of current routes under the No Action Alternative, in addition to an unknown number of other sites which may be reached by cross-country travel (PF WL-17). The action alternatives would reduce by seven the number of potential sites accessible by motorized vehicles from the existing condition. Since human activity at mines can displace bats from preferred habitat or make these sites unsuitable as roosts, Alternatives B, C and D represent an improvement over the existing condition if any of these seven sites serve as roosting habitat. In addition, the reduction in total motorized route miles under each action alternative may offer protection to unmapped mine sites that are serving as bat habitat, and limiting travel to designated routes would reduce disturbance to sites which may currently be reached via cross-country motorized travel.

Motorized access for dispersed camping would take place in close proximity to existing open roads (300 feet) and motorized trails (100 feet), and most motorized use would occur on existing routes due to the location of existing dispersed sites and surrounding terrain. In recent years we have not had many new user-created routes to dispersed sites, except for little shortcuts to existing sites, and we have been very successful identifying those and discouraging use. In the past 15 years few, if any, new dispersed sites have been created, and no resource concerns have been identified related to dispersed camping sites (REC-21). The steep terrain and heavy vegetation have been deterrents to the proliferation of new dispersed camp sites. The Forest Service intends to identify the other existing dispersed sites and designate access to those sites, so motorized access to dispersed sites would be similar to the existing condition. These routes would be designated as they are evaluated for resources. Therefore, the potential effects of motorized access for dispersed camping would be inconsequential and are represented by motorized route miles.

Cumulative Effects

Pocket Gopher Control – Pocket gopher control will not affect habitat for this species. The nature and scope of the project and the specificity of the treatment preclude the potential for effects.

Timber Harvest – The effects of past harvest on habitat are factored into the existing condition. No ongoing or proposed timber sales would have consequential effects on Townsend's big-eared bats because there are no harvest units within 500 feet of known mines (WL-10 Fallen Bear EA). There would be no cumulative effects due to lack of direct or indirect effects.

Non-commercial Timber Stand Improvement (thinning and pruning) – Thinning young, small diameter trees would not affect habitat for this species. The nature and scope of the project and the specificity of the treatment preclude the potential for effects because there are no thinning units within 500 feet of known mines (WL-10).

Prescribed Burning for Site Preparation and Fuels Treatment – This activity will not considerably affect habitat for this species because there are no units being burned within 500 feet of known mines (WL-10). There would be no cumulative effects due to lack of direct or indirect effects.

Fire Suppression – High-intensity wildfire generally can disturb this species if it occurs in the immediate vicinity of roost sites, and may decrease prey density by reducing vegetative cover in affected areas. As a result, fire suppression likely benefits this species in the short term by helping preserve forest cover around occupied sites, although it contributes to longer-term high fuel loads that subsequently lead to higher intensity fires in the future. However, the amount of future fire and level of successful suppression is impossible to predict.

Road Construction/Decommissioning – Several ongoing or proposed projects include system and temporary road construction, reconstruction, or decommissioning. The post-project condition of these roads is incorporated into the existing condition for travel planning purposes. No road construction, reconstruction, or decommissioning is in the vicinity of mines, so it would not increase disturbance to bat roost sites. As a result, the effects of road construction and decommissioning activities are already incorporated into the discussion above.

Public Activities (firewood gathering, snowmobiling, and hunting) – Firewood gathering, snowmobiling, and hunting would not affect habitat for this species or result in disturbance or mortality because of the low likelihood of these activities occurring near mines at times when bats are present. There would be no cumulative effects due to lack of direct or indirect effects.

Prescribed Burning for Stand and Wildlife Habitat Improvement – The Heller Cascade and Simmons Burning projects will not impact Townsend's big-eared bats because there are no open adits in the project areas. There would be no cumulative effects due to lack of direct or indirect effects.

Conclusion

Motorized access to known and previously undocumented mine sites presents a potential risk factor for Townsend's big-eared bats. The number of these sites within 200 feet of motorized routes under each alternative is used as a measure of potential effects. No other reasonably foreseeable actions would have measurable or consequential impacts on this species.

The potential effects associated with the action alternatives (reduction in motorized routes and elimination of travel off designated routes) would decrease the overall long-term likelihood for disturbance of Townsend's big-eared bats at roost sites. Roads and trails would remain a potential source of disturbance adjacent to known or suspected roost sites under all alternatives, but the action alternatives would effectively reduce the amount of motorized use in some areas. As a result, all alternatives may impact Townsend's big-eared bats or their habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

COEUR D'ALENE SALAMANDER

Habitat Relationships

Coeur d'Alene salamanders are restricted to cool, damp, aquatic habitats that have thermal and hydric stability. The species has been found in three major types of habitats in northern Idaho: spring seeps, waterfall spray zones and along stream edges between 1,800 to 3,500 feet elevation. Known populations occur in association with sharply fractured rock formations in conjunction with both persistent and intermittent surface water, usually in association with coniferous forests (Cassirer and others 1994). These conditions are critical for Coeur d'Alene salamanders since they respire through the skin and lose water to the environment through evaporation (Groves 1988). Eggs are apparently laid in moist subterranean fractured rock sites, and adults are generally above ground only at night in moist weather in the spring and fall (Nussbaum and others 1983). Foraging is usually restricted to seeps; spray zones, and streamsides, although they may venture from these areas during periods of wet weather (Groves and others 1996).

General threats to the species include timber harvest, road and trail construction, water diversion projects, pollution, introduction of exotic species, fire, and illegal collecting (Cassirer and others 1994). Motorized routes can pose threats to amphibian populations in a number of ways: direct mortality from traffic, habitat disruption (dust, noise, trampling of vegetation, etc.) from on- and off-road use, sedimentation or contamination of streams from road or trail runoff, and facilitation of introduction of non-indigenous predators and/or pathogens (Maxell and Hokit 1999).

For salamanders foraging at roadside seeps, mortality from traffic has been identified as a potential concern (Cassirer and others 1994) as this species is slow moving and unlikely to avoid collisions. However, no documentation was found verifying that this actually occurs; and since this particular species only frequents the surface under specific circumstances and rarely ventures onto road surfaces, the possibility of direct mortality is somewhat remote. Motorized use of roads and trails may increase erosion, but this has not been identified as a threat to Coeur d'Alene salamanders (Cassirer and others 1994). It is doubtful that dust, noise and other vehicle-related disturbances would greatly affect a species that is usually only above ground at night, when traffic is lowest. Habitat damage from off-road use is equally unlikely to occur since off-road motorists do not frequent the wet, fractured rock areas that provide habitat for this species. Since this salamander occasionally forages along streams, it may be at risk from introduced pathogens.

Affected Environment

The St. Joe River is considered to be one of the drainages that comprise the core of the species' distribution (Cassirer and others 1994). There are approximately 103 known Coeur d'Alene salamander sites on the St. Joe (Wilson 1991; Wilson 1992), (PF WL-32). Eighty-nine of these sites are on National Forest System lands, and all but two are adjacent to existing roads open to motorized use. However, this apparent affinity for open roads may well be an artifact of: 1) higher survey intensity, and 2) the presence of preferred habitat (wet, exposed rock) created by road construction. This proposal does not involve new road or trail construction, so the analysis will focus on the possible effects of existing and proposed motorized use. While most known Coeur d'Alene salamander sites on the district occur in the St. Joe River Drainage, they could also occur elsewhere on the district. The total miles of motorized routes and the number of known sites adjacent to motorized routes is used to measure potential effects on Coeur d'Alene salamanders.

Environmental Consequences

Direct and Indirect Effects

There are currently 3,412 miles of motorized routes in the assessment area. Open roads adjacent to known sites would continue to be designated open to motorized vehicles under all alternatives. As a result, the alternatives are only differentiated by the total number of miles of motorized routes, which addresses potential impacts to undiscovered Coeur d'Alene salamander populations. Alternative B would decrease motorized routes by 236 miles (a 7 percent reduction), while Alternative C represents a 196 mile (6 percent) reduction and Alternative D would reduce motorized routes by 189 miles (also 6 percent). Since there would be no road construction under any of the alternatives, conservation recommendations addressing road construction and placement are not discussed. Therefore, the action alternatives would improve overall habitat conditions for this species by reducing the potential for pathogen introduction and the admittedly remote chance of direct mortality or habitat disruption.

Motorized access for dispersed camping would take place in close proximity to existing open roads (300 feet) and motorized trails (100 feet), and most motorized use would occur on existing routes due to the location of existing dispersed sites and surrounding terrain. In recent years we have not had many new user-created routes to dispersed sites, except for little shortcuts to existing sites, and we have been very successful identifying those and discouraging use. In the past 15 years few, if any, new dispersed sites have been created, and no resource concerns have been identified related to dispersed camping sites (REC-21). The steep terrain and heavy vegetation have been deterrents to the proliferation of new dispersed camp sites. The Forest Service intends to identify the other existing dispersed sites and designate access to those sites, so motorized access to dispersed sites would be similar to the existing condition. These routes would be designated as they are evaluated for resources. Therefore, the potential effects of motorized access for dispersed camping would be inconsequential and are represented by motorized route miles.

Cumulative Effects

Pocket Gopher Control – Pocket gopher control would not affect habitat for this species. The nature and scope of the project and the specificity of the treatment preclude the potential for effects because planted units treated with this activity are not Coeur d'Alene salamander habitat.

Timber Harvest – The requirement for riparian habitat conservation area (RHCA) buffer zones means that habitat associated with stream edges and waterfall spray zones would not be affected by timber harvest. These riparian buffers would also protect any potential fractured rock seep habitat along the lengths of roads adjacent to the creeks. Therefore, timber harvest activities associated with ongoing or proposed timber sales would have no cumulative effects on Coeur d'Alene salamander due to lack of direct or indirect effects. Potential effects of road construction from these projects are discussed below.

Non-commercial Timber Stand Improvement (thinning and pruning) - Thinning young, small diameter trees would not affect habitat for this species. The nature and scope of the project and the specificity of the treatment preclude the potential for effects because pre-commercial thinning is done in previously harvested and regenerated units that are not Coeur d'Alene salamander habitat.

Prescribed Burning for Site Preparation and Fuels Treatment – This activity is unlikely to affect habitat for this species, since potential Coeur d'Alene salamander sites would have already been buffered from timber harvest units.

Fire Suppression – High-intensity wildfire generally can be expected to adversely impact Coeur d'Alene salamander habitat by removing the coniferous forest cover proximal to seeps and spray zones this species inhabits. As a result, fire suppression likely benefits this species by helping preserve forest cover around occupied sites. However, the amount of future fire and level of successful suppression is impossible to predict.

Road Construction/Decommissioning – Several ongoing or proposed projects include system and temporary road construction, reconstruction, or decommissioning (WL-10). The post-project condition of these roads is incorporated into the existing condition for travel planning purposes. Proposed system and temporary road construction, reconstruction, and decommissioning would not impact any known Coeur d'Alene salamander sites (PF WL-10). For these projects, the risk to the species and habitat is negligible because of the inherent limited presence of capable habitat.

Public Activities (firewood gathering, snowmobiling, and hunting) – These activities would not affect habitat for this species, and would not result in disturbance or mortality. Personal firewood cutting is prohibited within 300 feet of any running water or 25 feet of any seasonally wet area. There would be no cumulative effects due to lack of direct or indirect effects.

Prescribed Burning for Stand and Wildlife habitat Improvement – The Heller Cascade and Simmons projects would not take place near any known Coeur d'Alene salamander sites (WL-18c Heller Cascade DM, WL-57). Since these projects generally take place in higher-elevation sites that contain limited spring/seep habitat, the possibility of effects to previously undiscovered Coeur d'Alene salamander sites is remote. In addition, burning at the higher elevations would not take place during the spring period of salamander activity. There would be no consequential cumulative effects due to the low potential for adverse direct or indirect effects.

Conclusion

Under the No-Action Alternative, roads and trails would continue to be managed as they currently are, while the action alternatives represent varying reductions in motorized route miles. There would be no additional road or trail construction authorized by this proposal. Since motorized routes may pose minor threats by potentially facilitating introduction of pathogens, all alternatives may impact Coeur d'Alene salamanders or their habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

WESTERN TOAD

Habitat Relationships

Western toad breeding habitat includes shallow, quiet water in lakes, marshes, bogs, ponds, wet meadows, slow moving streams, back-water channels of rivers, and other persistent water sources (Maxell 2000). Young toads are restricted in distribution and movement by available moist habitat, while adults can move several miles and reside in marshes, wet meadows, or forested areas. Toads hibernate in the winter in habitats that maintain a high humidity and above-freezing temperatures. Areas that provide shelter for hibernating toads include rodent burrows, beaver dams and slash piles (Loeffler 1998).

Reasons for the decline of the western toad have not been defined with any degree of certainty. However, habitat alterations from timber harvest, grazing, recreation, and water development would likely not be beneficial to long-term enhancement of western toad habitats (Loeffler 1998). One hypothesis explaining the western toad decline concerns mortality caused by disease or some other widespread agent. However, none of these factors have been shown as causative agents for population declines.

As discussed above (Coeur d'Alene Salamander section), motorized routes can pose several threats to amphibian populations: direct mortality from traffic, habitat disruption (dust, noise, trampling of vegetation, etc.) from on- and off-road use, sedimentation or contamination of streams from road or trail runoff, and facilitation of introduction of non-indigenous predators and/or pathogens (Maxell and Hokit 1999). It is also important that toads be able to move among their seasonal habitats (breeding ponds, summer range and overwinter refugia). The biggest potential barriers to their movement are roads. In addition to direct mortality, it has been suggested that steep road cuts can be a barrier to toads moving between seasonal habitats. In southern Ontario Eigenbrod and others (2008) found that a busy motorway formed a nearly complete barrier to anuran (frog and toad) dispersal.

Road kill has been identified as a risk factor for the western toad (Maxell 2000; Jochimsen and others 2004). Juvenile toads are vulnerable to being killed by motorized vehicles when they are dispersing from their natal ponds, and roads can also provide a barrier-free travel corridor that then provides opportunities for adult mortality from vehicles or exposure to predators. Motorized traffic can also create ruts in roads or trails that pool water and subsequently attract western toads. Juvenile mortality can occur if the ruts dry out before the tadpoles metamorphose (Wind and Dupuis 2002), tires of passing vehicles kill animals in the ruts, or the ruts serve to concentrate predators at the site (Jochimsen and others 2004).

Physical alteration of habitats (trampling) from off-road vehicle use likely has minor effects to this species since it uses a variety of upland habitats, but direct mortality from tires may take place here as well. Sedimentation or contamination of small water bodies next to open roads or motorized trails can be an issue for this species, since it often breeds in these areas. Maxell and Hokit (1999) suggest that noise from on- and off-road vehicles may prevent western toads from properly hearing and moving toward breeding aggregations, as they do not have loud calls and may not be heard from long distances or in the presence of other noises. Introduction of nonnative predators (particularly fish) may have only minor impacts on western toads, whose eggs and tadpoles are apparently toxic to most predators (Loeffler 1998). However, motorized routes can also facilitate spread of pathogens – most notably the chytrid fungus, which has been suggested as a major element contributing to toad population declines (Maxell 2000). Aside from the risk of direct mortality, there is little evidence that forest roads are impermeable barriers to western toad movement (in their 2008 study, Eigenbrod and others used a busy, four-lane highway – Highway 401 in southern Ontario – that anurans likely could not cross at any time of day or night without being struck by a vehicle). A western toad was observed successfully negotiating a steep, loose road cut on the Priest Lake Ranger District (B. Lyndaker, pers obs.). Since western toads occasionally use streamcourses as travel routes (B. Maxell, pers. com.), it is reasonable to assume that they could make use of underground culverts to safely cross roads.

Affected Environment

Western toads have been recorded in the project area and potential breeding habitat is present (PF WL-36). A large amount of this breeding habitat is associated with riparian areas adjacent to streams. Based on habitat needs as described in the literature, the mesic nature of much of the forests of the IPNF indicate that toads have many opportunities to find persistent small water sources for breeding, and could successfully disperse through moist forests.

Vehicle traffic on existing open roads and restricted roads constitute an identified risk to the western toad (Maxell 2000). This risk is measured by the miles of motorized routes (roads and trails) in the project area, and within 300 feet of streams (used as a proxy for riparian areas).

Environmental Consequences

Direct and Indirect Effects

Table 15: Western Toad Evaluation Criteria by Alternative

Evaluation Criteria	Existing (Alt. A)	Alt. B	Alt. C	Alt.D
St. Joe motorized route miles	3,412	3,176	3,216	3,223
Miles of motorized routes within 300 feet of streams	1,147	1,118	1,139	1,144

The No-Action Alternative would not change motorized route miles or prohibit cross-country motorized travel. As a result, the risk of direct mortality or pathogen spread would also remain unchanged. Alternatives B, C, and D would each reduce motorized routes on the district by several hundred miles (7, 6, and 6 percent, respectively) and, consequently, lower the risk of direct mortality from vehicle collisions. There are approximately 1,147 miles of existing motorized routes within riparian areas (INFS buffers) on the district. Alternative B would reduce this number by 29 miles (3 percent), while Alternative C would reduce this number by 8 miles (0.7 percent) and Alternative D by 3 miles (0.3 percent). In addition, the action alternatives would reduce the risk of direct mortality of adults and dispersing juveniles by prohibiting off-road motorized travel except in designated areas (currently, this use is allowed unless specifically prohibited). This prohibition would also reduce motorized use (and attendant mortality risk) in the vicinity of small standing water areas that may serve as breeding habitat but are not included in riparian buffers.

Motorized access for dispersed camping would take place in close proximity to existing open roads (300 feet) and motorized trails (100 feet), and most motorized use would occur on existing routes due to the location of existing dispersed sites and surrounding terrain. In recent years we have not had many new user-created routes to dispersed sites, except for little shortcuts to existing sites, and we have been very successful identifying those and discouraging use. In the past 15 years few, if any, new dispersed sites have been created, and no resource concerns have been identified related to dispersed camping sites (REC-21). The steep terrain and heavy vegetation have been deterrents to the proliferation of new dispersed camp sites. The Forest Service intends to identify the other existing dispersed sites and designate access to those sites, so motorized access to dispersed sites would be similar to the existing condition. These routes would be designated as they are evaluated for resource concerns. Therefore, the potential effects of motorized access for dispersed camping would be inconsequential and are represented by motorized route miles.

Cumulative Effects

Pocket Gopher Control – Pocket gopher control would not affect breeding habitat for this species. The nature and scope of the project and the specificity of the treatment preclude the potential for effects because the recent cutting units treated with this activity are not preferred habitat for western toads.

Timber Harvest – The requirement for riparian habitat conservation area (RHCA) buffer zones restricts timber harvest in these areas. As a result, the potential for direct mortality from equipment operating off-road is eliminated in areas where western toads are most likely to travel. With best management practices (BMPs) in place to protect water quality and fish habitat, and INFS protection measures implemented to protect waterways and wetlands, impacts to western toad breeding areas should be minimal. Since western toads use a variety of upland areas, the change in vegetation structure in logged units should have no long-term effect as they are able to move to adjacent areas with vegetation cover. This species may avoid openings created by recent timber harvest for 5-10 years following harvest, since toads have an affinity for forested cover in upland areas (Loeffler 1998). However, some research has indicated that western toads may benefit from fuels reduction treatments and appear to be attracted to recently disturbed areas (Pilliod and others 2006). Potential effects of road construction from these projects are discussed below.

Non-commercial Timber Stand Improvement (thinning and pruning) - Thinning young, small diameter trees is unlikely to have impacts on western toads. No breeding habitat would be altered or breeding disrupted because breeding habitat wetlands would have had a no treatment buffer when these units were originally cut, therefore no pre-commercial thinning would be conducted at these sites. There would also be no off-road vehicle use associated with this activity. There is the possibility of an occasional adult mortality due to increased vehicle use on roads to access thinning areas, but this use would be of short duration in any given area, and direct mortality would be rare and inconsequential.

Prescribed Burning for Site Preparation and Fuels Treatment – This activity would temporarily reduce cover in burned areas, and may cause occasional mortality to relatively slow-moving toads that are unable to escape flames. However, potential breeding areas would not be affected because they will have already been buffered from timber harvest units. In addition, some research has indicated that western toads may benefit from fuels reduction treatments and appear to be attracted to recently disturbed areas (Pilliod and others 2006).

Fire Suppression – Continued fire suppression would not significantly impact western toad populations. These activities are unlikely to impact breeding habitat (most fire suppression activities take place outside the breeding season), and potential modifications to upland forested habitat would be inconsequential since this species makes use of a variety of upland habitats. While there is a risk of mortality associated with fire suppression as a result of increased vehicular use of roads, these instances would be infrequent and isolated.

Road Construction/Decommissioning – Several ongoing or proposed projects include system and temporary road construction, reconstruction, or decommissioning (WL-10). The post-project condition of these roads is incorporated into the existing condition for travel planning purposes. System and temporary road construction, reconstruction, and decommissioning proposed with ongoing projects may result in some unknown level of toad mortality from toads being struck by early-morning haul or crew vehicle traffic. However, this effect would be short term for each project, generally limited to one operating season during the drier months (July-September); and toad activity, if affected, is expected to resume in the area after project completion because the disturbance would end and nearby mesic habitat would be undisturbed.

Public Activities (firewood gathering, snowmobiling, and hunting) – Personal-use firewood gathering and various recreation activities (excluding off-road motorized use, addressed in alternative discussions) would not significantly impact western toad populations. These activities would not impact breeding habitat, and potential modifications to upland forested habitat would be inconsequential because relatively few snags are cut. While there is a risk of direct mortality associated with these activities as a result of vehicular use of roads, these instances would be infrequent and isolated because most public use occurs during the drier months when toads are less likely to be using open roadside habitat.

Prescribed Burning for Stand and Wildlife Habitat Improvement – While there is a possibility of dispersing toads being in a proposed unit when it is burned, the majority of the population and the potential breeding habitat would not be affected by the Heller Cascade or Simmons projects because there would be no ignition in riparian habitat conservation areas (WL-18c Heller Cascade DM, WL-56 Simmons DM). Habitat in the proposed burn units would become less useful for toads as a result of the reduced vegetative cover and shade after burning, but the quality of this habitat for toads would increase after trees and shrubs have grown enough to provide good canopy cover for shade and the creation of more mesic habitat. Since additional mortality from this project is unlikely and affected habitat would be of low quality and infrequently used because of drier, open-canopied conditions, potential adverse effects would not significantly elevate existing levels of risks to the species.

Conclusion

Action alternatives would reduce total miles of motorized routes in both riparian and upland habitats and prohibit cross-country motorized travel. The remaining road and trail network would pose a reduced risk of direct mortality (collisions) and adverse habitat modifications (including potential spread of chytrid fungus). As a result, all alternatives may impact western toads or their habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Summary of Effects

The preceding Sensitive Wildlife Species section documents the analysis of potential impacts and provides the rationale for the effects determinations. A summary of the determination of effects for each species by alternative follows. The rationale for the conclusion of effects is contained in previous sections.

Table 16: Sensitive Species Biological Evaluation Summary of Conclusion of Effects**

Species	Alternative A	Alternative B	Alternative C	Alternative D
American peregrine falcon	NI	NI	NI	NI
Bald eagle	NI	NI	NI	NI
Black-backed woodpecker	MIIH	MIIH	MIIH	MIIH
Black swift	NI	NI	NI	NI
Coeur d'Alene salamander	MIIH	MIIH	MIIH	MIIH
Common loon	NI	NI	NI	NI
Fisher	MIIH	MIIH	MIIH	MIIH
Flammulated owl	MIIH	MIIH	MIIH	MIIH
Fringed myotis	MIIH	MIIH	MIIH	MIIH
Gray wolf	MIIH	MIIH	MIIH	MIIH
Harlequin duck	MIIH	MIIH	MIIH	MIIH
North American Wolverine	MIIH	MIIH	MIIH	MIIH
Northern bog lemming	NI	NI	NI	NI
Pygmy nuthatch	MIIH	MIIH	MIIH	MIIH
Townsend's big-eared bat	MIIH	MIIH	MIIH	MIIH
Western toad	MIIH	MIIH	MIIH	MIIH

NI = No Impact

MIIH = May Impact Individuals or Habitat But Will Not Likely Contribute to a Trend Towards Federal Listing or Loss of Viability to the Population or Species

WIFV = Will Impact Individuals or Habitat with a Consequence that the Action May Contribute to a Trend Towards Federal Listing or Cause a Loss of Viability to the Population or Species

BI = Beneficial Impact

Management Indicator Species

ELK

Management Indicator Species (MIS) were identified in the planning process and were proposed because they represent an issue or concern. Elk are an important big game species within the St. Joe River basin. Elk were selected as a management indicator species for the 2015 Forest Plan because they are of high social importance and are sensitive to the availability of security habitat. Elk security habitat was a concern, especially given the importance of this species for hunting. Elk will be an indicator for elk security only (USDA 2013b). Elk were not selected as a MIS because of a viability concern and their viability will not be analyzed or monitored at the project level (USDA 2013b). They are an important economic species that are of common public interest and are monitored by the Idaho Department of Fish and Game. The increase in numbers of people associated with increased access is almost universally detrimental to elk. Elk move away from human disturbance whenever harassed, and elk that remain in logged and roaded areas are subject to more hunters over a longer period of time than elk that live in more secluded habitats. Because human access into elk habitat is the primary problem associated with roads and motorized trails, perhaps the most critical habitat management factor facing wildlife managers is the use of roads and motorized trails (IDFG 2009).

Population Information

Elk populations in Idaho have increased over the last 50 years; however, total pressure on the resource has dramatically increased. Human development has reduced available habitat on winter ranges and increased access into elk habitat, and wolves were reintroduced in 1995 resulting in another large predator on the landscape. Idaho Fish and Game aerial surveys from 2006 from the Panhandle Region (which includes the St. Joe) indicates that elk cow numbers in the Region were slightly below objectives, while elk bull numbers exceeded objectives (Idaho Fish and Game 2009 [elk]). By having populations that support harvest levels, viability is not a concern for this species.

Habitat Relationships

Elk occur in diverse habitats. Depending on the season and local conditions elk make use of open areas, clearcuts, and timbered areas. Elk move from forage to cover areas and from one seasonal range to another. Motorized roads affect elk habitat quality, potential elk use of habitat, and elk mortality from hunting (Leege 1984).

Methodology

Elk habitat security is an issue affected by travel management, and Elk Management Units (EMU) are used as the analysis unit for elk security as this was the measurement scale agreed upon through coordination with the Idaho Department of Fish and Game (USDA 2013b). These EMUs are based on IDFG Big Game Hunting Subunits. See Table 17 below and Figure 3. IDFG identified EMUs relative to priority areas for elk management and the need for improvement of elk security conditions (i.e. low, medium, and high emphasis) during the Forest Plan revision process. Elk security is defined as timber stands in blocks of habitat greater or equal to 250 acres and greater or equal to 0.5 miles from an open motorized route during hunting season. Open motorized routes used for the calculations include all those on the Forest, as well as those adjacent to the Forest that would impact security habitat on National Forest System (NFS) lands. Security will be calculated only for those acres on the Forest and does not include areas not under NFS management. This is because the Forest assumes that non-NFS lands do not contain security habitat, or if it currently does that any existing security habitat may not be retained by those other landowners (USDA 2013b).

As this project is limited solely to travel management and does not involve any treatment of vegetation or other ground-disturbing activities; other aspects of elk habitat such as hiding cover, thermal cover, and forage amounts would not be affected. Therefore these factors were not included in the security habitat analysis.

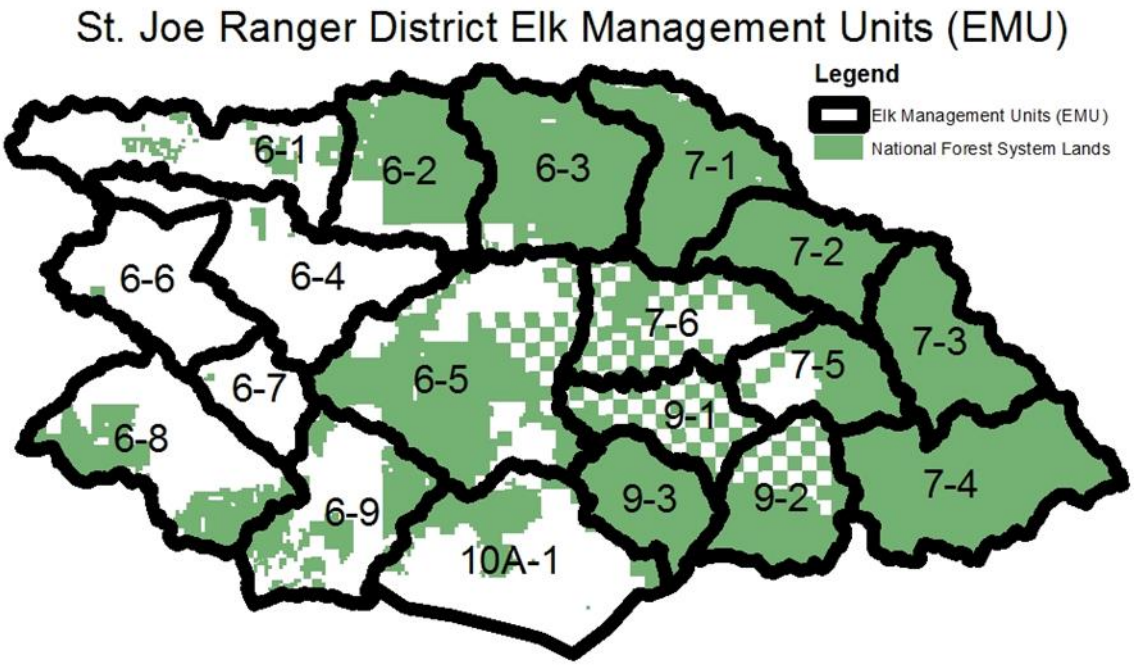

Figure 3: 2015 Forest Plan Elk Management Units on the St. Joe Ranger District

Only changes in road and trail status (i.e. motorized, non-motorized, and seasonal motorized) and the resulting changes in secure habitat were used to determine effects on elk. To meet Forest Plan direction, management activities in EMUs should maintain; and where possible improve the existing levels of elk security habitat. An objective from the Forest Plan is to increase by three the number of high or medium priority EMUs with greater than 30% secure habitat (USDA 2013b).

Table 17: 2015 Forest Plan Elk Management Units

EMU	Total Acres	NFS Ac. (%)	IDF&G Priority Ranking
6-1	71,857	10,218 (14.2)	Low
6-2	62,262	44,834 (72.0)	High
6-3	79,897	75,795 (94.9)	High
6-5	133,604	83,550 (62.5)	High
6-8	84,581	32,320 (38.2)	Medium
6-9	70,469	29,023 (41.2)	Medium
7-1	61,387	60,475 (98.5)	High
7-2	47,311	47,207 (99.8)	Medium
7-3	55,232	55,167 (99.9)	High
7-4	89,704	89,678 (100)	Low
7-5	41,765	27,870 (66.7)	Medium
7-6	63,705	35,189 (55.2)	Low
9-1	40,498	22,775 (56.2)	Low
9-2	50,515	40,246 (79.7)	Low
9-3	38,935	38,884 (99.9)	Low
10A-1	98,127	26,985 (27.5)	Low
Totals	**1,089,849**	**720,214 (66.1)**	

Affected Environment

Past disturbances, forest succession, the existing road systems, and present management of roads and trails combine to affect elk habitat quality.

Existing Condition

Forest Plan

The existing conditions (Alterative A) for elk security are included with the comparison of alternatives and displayed in Table 18. There is no set numerical percent security standard for individual EMUs; however existing security should be maintained (USDA 2015). The EMUs range from 0 to 62% security, and there are currently two EMUs with at least 30% security. All EMUs except one (which has only 14% NFS land) have some secure habitat.

Environmental Consequences

Direct and Indirect Effects

The following tables display the changes in Forest Plan measurement criteria for elk. See project file documents (WL24-WL27) for maps displaying elk security by alternative.

All action alternatives would increase the overall amount of security habitat from the existing condition on the district, so conditions for elk in terms of habitat security and hunting vulnerability are expected to improve. Although the change would be modest, conditions for elk would be expected to improve under all action alternatives. Alternatives B, C and D increase security by an average of 3.8%, 4.4% and 6.2% per EMU, respectively. Elk security district-wide is increased by 4%, 5%, and 6% with alternatives B, C, and D, respectively. See Table 19 below. Secure habitat would be improved in 12, 11, and 12 EMUs respectively under alternatives B, C and D. Alternatives B and C would move one low priority EMU (9-3) to over 30% security, while Alternative D would increase two EMUs to over 30% security. As this second EMU (7-5) is a medium priority, this would help achieve the Forest Plan objective to increase the number of medium or high priority EMUs with over 30% elk security.

Table 18: - Comparison of Secure Habitat by Elk Management Unit by Alternative

		Alternative A		Alternative B		Alternative C		Alternative D	
EMU	NFS Ac. (%)	Secure Ac. NFS	% Elk Security	Secure Ac. NFS	% Elk Security	Secure Ac. NFS	% Elk Security	Secure Ac. NFS	% Elk Security
6-1	10,218 (14.2)	0	0	0	0	0	0	0	0
6-2	44,834 (72.0)	5,227	11.7	8,509	19.0	7,360	16.4	7,360	16.4
6-3	75,795 (94.9)	15,898	21.0	16,752	22.1	17,660	23.3	16,317	21.5
6-5	83,550 (62.5)	4,937	5.9	6,446	7.7	6,554	7.8	6,554	7.8
6-8	32,320 (38.2)	2,551	7.9	3,009	9.3	3,009	9.3	3,009	9.3
6-9	29,023 (41.2)	784	2.7	1,443	5.0	1,443	5.0	1,443	5.0
7-1	60,475 (98.5)	7,602	12.6	11,918	19.7	13,603	22.5	13,603	22.5
7-2	47,207 (99.8)	8,480	18.0	10,685	22.6	11,147	23.6	11,147	23.6
7-3	55,167 (99.9)	4,697	8.5	13,823	25.1	14,294	25.9	14,294	25.9
7-4	89,678 (100)	43,859	48.9	45,368	50.6	43,859	48.9	46,446	51.8
7-5	27,870 (66.7)	1,098	3.9	5,488	19.7	5,687	20.4	11,596	41.6
7-6	35,189 (55.2)	2,025	5.8	2,025	5.8	2,025	5.8	2,025	5.8
9-1	22,775 (56.2)	2,907	12.8	3,270	14.4	3,270	14.4	3,270	14.4
9-2	40,246 (79.7)	24,946	62.0	24,946	62.0	24,946	62.0	24,946	62.0
9-3	38,884 (99.9)	11,142	28.7	13,795	35.5	13,795	35.5	16,007	41.2
10A-1	26,985 (27.5)	6,411	23.8	6,411	23.8	6,411	23.8	6,411	23.8
District	**720,214 (66.1)**	**142,564**	**19.8**	**173,888**	**24.1**	**175,063**	**24.3**	**184,428**	**25.6**

Table 19: Percent Change from Existing Condition in Secure Habitat by Elk Management Unit by Alternative

EMU	Alt. A Existing Condition % Secure	Alt. B Change in % Secure	Alt. C Change in % Secure	Alt. D Change in % Secure
6-1	0	0	0	0
6-2	11.7	7.3	4.7	4.7
6-3	21.0	1.1	2.3	0.5
6-5	5.9	1.8	1.9	1.9
6-8	7.9	1.4	1.4	1.4
6-9	2.7	2.3	2.3	2.3
7-1	12.6	7.1	9.9	9.9
7-2	18.0	4.6	5.6	5.6
7-3	8.5	16.6	17.4	17.4
7-4	48.9	1.7	0	2.9
7-5	3.9	15.8	16.5	37.7
7-6	5.8	0	0	0
9-1	12.8	1.6	1.6	1.6
9-2	62.0	0	0	0
9-3	28.7	6.8	6.8	12.5
10A-1	23.8	0	0	0
District EMU Acres (NFS)	**19.8**	**4.3**	**4.5**	**5.8**
Average % Change per EMU	**NA**	**3.8**	**4.4**	**6.2**

Motorized access for dispersed camping would take place in close proximity to existing open roads (300 feet) and motorized trails (100 feet), and most motorized use would occur on existing routes due to the location of existing dispersed sites and surrounding terrain. In recent years we have not had many new user-created routes to dispersed sites, except for little shortcuts to existing sites, and we have been very successful identifying those and discouraging use. In the past 15 years few, if any, new dispersed sites have been created, and no resource concerns have been identified related to dispersed camping sites (REC-21). The steep terrain and heavy vegetation have been deterrents to the proliferation of new dispersed camp sites. The Forest Service intends to identify the other existing dispersed sites and designate access to those sites, so motorized access to dispersed sites would be similar to the existing condition. These routes would be marked on the ground as they are evaluated for resources. Therefore, the potential effects of motorized access for dispersed camping would be inconsequential and are represented by motorized route miles.

Cumulative Effects

Pocket Gopher Control – Pocket gopher control would not affect habitat for elk, and would not change the existing road system. The nature and scope of the project and the specificity of the treatment preclude the potential for effects.

Timber Harvest – As there is no vegetation treatment with the travel management project, there would be no additional cumulative effects on elk from timber harvest activities associated with ongoing or proposed timber sales. The effects on vegetation from existing and proposed timber harvest are included in secure habitat (per the 2015 Forest plan) calculations; and would not change with this project. Some roads may need to be closed to maintain security that would be lost through proposed regeneration harvest units. Any future road closures needed to mitigate lost secure habitat would occur under all travel management alternatives. Therefore there would be no cumulative differences between the alternatives as a result of reasonably foreseeable timber harvest. Potential effects of road construction from these projects are discussed below.

Pre-commercial Timber Stand Improvement - The dense, young sapling and small pole stands typically targeted for pre-commercial thinning are not quality elk habitat. Some hiding cover is lost when stands are thinned; however potential forage would be slightly increased, resulting in essentially neutral habitat effects. Road management status is not changed with implementation of precommercial thinning. There would be no additional cumulative effects from this activity.

Prescribed Burning for Site Preparation and Fuels Treatment – This activity generally has a short-term benefit for elk as it allows for shrub growth on the harvested site and reduces logging debris that could impede travel. At the district scale, the amount of this activity (averaging roughly 200 acres/year, J.Grasham pers. comm. 2015) would have inconsequential effects on elk habitat. This activity does not change the district's open road system, and therefore would not add to cumulative effects.

Fire Suppression – Fire suppression activities would not result in permanent changes to the district's open road and trail system. Any temporary roads or dozer lines constructed during suppression activities would be rehabilitated and closed after use, so there would be no change in elk habitat security. The potential effects of fire suppression cannot be quantified, since we cannot know where and when fires would occur. While fire suppression would maintain cover, it would also reduce the amount of potential forage that could occur in burned openings. Therefore this activity would not result in additional cumulative effects.

Road Construction/Decommissioning – Several ongoing or proposed projects include temporary road construction, road reconstruction, or decommissioning (WL-10). The post-project condition of these roads is incorporated into the existing condition of this travel management analysis. Temporary and specified road construction proposed for these projects would not increase elk vulnerability since these road segments would not be available for public use, and would be closed after activities cease (WL-10). No new open roads would be added to the current road system. Road decommissioning can reduce motorized route density and increase secure habitat. Potential disturbance from road construction or decommissioning would be inconsequential because of the relatively small percentage of the district's road system treated each year. As a result, these activities would have an insignificant additive effect.

Public Activities (firewood gathering, snowmobiling and hunting) – Public activities such as firewood gathering would have an insignificant effect on habitat conditions for elk because snags are not an important habitat component for elk. Effects from snowmobiling and hunting are linked to the open road system; and effects resulting from roads are analyzed above. There would be no additional cumulative effects from these activities.

Prescribed Burning for Stand and Wildlife Habitat Improvement – The nature of these projects (Heller Cascade and Simmons Burning Projects) would not adversely affect the forest structure component of habitat for elk because 58-77 percent of the project areas would still be in forested stands after completion (WL18b, WL-56, WL-57). This project would not interrupt any linkages or connections between habitats because the majority of potential travel corridors are not in proposed units (WL-18b, WL-57). Forage levels are expected to increase in the proposed burn units, which would increase habitat quality. This project would not affect long-term access, road densities or road management status. This project would not result in additional cumulative effects.

Conclusion

Under the No-Action Alternative, roads and trails would continue to be managed according to existing designations, while the action alternatives represent varying overall reductions in motorized route miles. These reductions result in decreased open road densities and increased amounts of secure habitat for the district as a whole. Since all alternatives meet the Forest Plan standards, elk populations on the St. Joe are expected to be maintained or improved.

Consistency with Forest Plan and Other Regulations

All alternatives are consistent with applicable goals, direction, objectives, desired conditions, standards, and guidelines from the 2015 (See WL–22, Forest Plan Consistency Table) Forest Plan for the management of wildlife habitat and species populations. All alternatives comply with other direction and recommendations regarding management of the various components of wildlife habitat including the percent old growth allocated and size of old growth units/patches (USDA 2010, USDA 2013). All alternatives comply with applicable conservation strategies for wildlife species (see Table 89). All alternatives are consistent with the Endangered Species Act (ESA) (PI-219), the National Forest Management Act (NFMA) (WL-22), and other direction and requirements for the management of wildlife species and habitat.

Standards and Guidelines in the Northern Rockies Lynx Management Direction (USDA 2007) have been incorporated as part of the 2015 Forest Plan. All alternatives are consistent with this document (WL-37), and therefore meet the 2015 Forest plan standard that the NRLMD be applied (USDA 2015 p. 31).

The action alternatives are also consistent with the Forest Plan goal of managing and scheduling activities to avoid or minimize disturbance to sensitive species (USDA 2015 p. 29). See Table 16.

Progress towards desired conditions for snags and old growth under the Forest Plan (WL-22) would not be affected by this project as all action alternatives would decrease the potential for impacts to snag or old growth habitat (USDA 2015 p.13). As displayed in Table 18 and Table 19, all action alternatives meet the 2015 Forest Plan guideline (USDA 2015 p. 32) to maintain the existing levels of elk security.

An executive order directs agencies to ensure that environmental analyses evaluate the effects of federal actions on migratory birds, with emphasis on species of concern. Migratory birds are included in the analysis for threatened and endangered, sensitive, and management indicator species; the landbird assemblage; and other species of potential concern. All alternatives would be consistent with the Migratory Bird Treaty Act because no activities are proposed that would add to ongoing effects on migratory birds.